HUMANITIES DOCTORATES IN THE UNITED STATES

1987 PROFILE

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Office of Scientific and Engineering Personnel
NATIONAL RESEARCH COUNCIL

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SUMMARY OF FINDINGS

This report, the sixth in a biennial series, is based on results of the 1987 Survey of Humanities Doctorates. It profiles select demographic and employment characteristics of the population of humanities doctorates who earned their degrees between January 1944 and June 1986 and were residing in the United States in February 1987. To provide a context for interpreting this profile of characteristics, historical information is sprinkled throughout the report. Moreover, a special section, which focuses on employment dynamics within the humanities labor force, has been introduced into this report series. The major findings presented in this report are summarized below.

The U.S. Population of Humanities Doctorate Recipients

- The estimated number of humanities doctorates residing in this country in 1987 was 95,000. Between 1985 and 1987, this population grew by 4.9 percent, the slowest 2-year growth since the original survey, in 1977.

- Holders of degrees in English and American languages and literature constituted the largest share of this population (26 percent).

- The geographic dispersion of humanists across the major regions of the United States was essentially consistent with that of the entire U.S. population, though New England had a slightly higher and the West South Central region had a slightly lower proportion of humanists than of people in the general population.

- Women continued to increase their representation in the humanities population in both number and percent. In 1987 they constituted nearly a third of the humanists in this country; this compares with the low of roughly 24 percent observed in the 1977 survey.

- The racial/ethnic minority composition of the humanities population has increased slightly over the survey years, from nearly 5 percent in 1977 to nearly 7 percent in 1987. However, this modest percentage increase is borne out of a doubling in the number of such doctorates, from 3,100 in 1977 to 6,200 in 1987.

- A fairly dramatic age redistribution has occurred within the humanities population over the last decade. Once the largest share of

humanists, doctorates in their thirties now compose the smallest share while the proportions in their forties and fifties, and those who are 60 or older, are growing. Trends in the numbers of degrees earned and, though to a lesser extent, the increasing age at which the average humanist obtains the doctorate has brought about the age shift.

Employment Characteristics

- Approximately 90 percent of the total 95,000 humanists were employed in 1987. Roughly 81 percent were holding full-time positions, and another 8 percent were working part-time. Postdoctoral appointments continued to be a slight fraction--approximately 1 percent--of the jobs held by these individuals.

- The proportion of humanists who worked in fields outside the humanities rose once again; in 1987, nearly a quarter of all full- and part-time workers were employed in nonhumanities fields. However, many of the fields in this classification are not totally unrelated to the humanities.

- The rate of employment within the academic sector has continued to decrease, from roughly 90 percent in 1977 to 81 percent in 1987. Alternatively, the rate of employment in the business sector has continued to increase, from roughly 3 percent in 1977 to 10 percent in 1987.

- The median annual salaries of full-time employed humanists varied little by broad sector of the labor market. For 4- and 2-year educational institutions, for business, and for government, those average salaries ranged from approximately $39,000 to $40,000. Field and gender differences were noted, however.

- Between 1985 and 1987, the median salaries of humanists in each of the broad sectors of the labor market grew well beyond the increase in the Consumer Price Index (CPI). While the CPI rose 4.8 percentage points between February 1985 and February 1987, salaries of humanists employed full-time in business/industry grew by 27 percent. Corresponding increases for humanists working in 2-year colleges, government, 4-year educational institutions, and elementary/secondary schools were 15 percent, 16 percent, 12 percent, and 11 percent, respectively.

- The number of humanities doctorates employed in the academic sector has climbed fairly consistently over the last decade, from 51,500 in 1977 to 66,100 in 1987. However, the noted decline in the rate of such employment indicates that the labor force of humanities doctorates has risen faster than the academic work force.

- Full professorships have grown by 50 percent since 1977, when 15,200 humanists held this rank; these positions also claim a growing share of the total employed in the academic sector, rising 6 percentage points from the 35 percent who were so employed in 1977. In contrast, assistant professorships have decreased slightly in absolute terms, from 12,800 to 11,000, and also have decreased proportionately, from 25 percent to 17 percent of the academic work force.

Employment Dynamics

The findings highlighted below are based on information provided by respondents to two consecutive surveys. These selected findings are intended to characterize the extent to which humanities doctorates maintain or, alternatively, change their job status. Three characteristics were examined: employment status, employment sector, and primary work activity.

- Of those who were employed full-time or were retired during the first of the two consecutive surveys, a high proportion (over 90 percent) had maintained this status when resurveyed. As might be expected, postdoctoral appointees, on the other hand, changed their status to that of full-time employment in notable proportions.

- Between 91 and 94 percent of the humanists employed in the 4-year educational institutions in the first survey were similarly employed in the follow-up. This, the largest sector of employment for humanities doctorates, had the highest rate of retention from time 1 to time 2. By comparison, retention rates for 2-year colleges, elementary/secondary schools, business/industry, and the federal government were clustered more around the 80-85 percent range.

- Among the three characteristics analyzed, the activities to which humanists devoted the most significant portions of their work time--their primary work activities--were the most likely to change from one survey to the next. Teaching exhibited the highest work activity retention rates, between roughly 78 and 85 percent. Next was management/administration, ranging between 60 and 63 percent.

CONTENTS

INTRODUCTION	1
DOCTORAL POPULATION	3
By Field	3
Geographic Differences	5
Demographic Characteristics	6
EMPLOYMENT	11
Employment Status: Total Graduates	11
Employment Status: Recent Graduates	13
Labor Force Status: Total Graduates	13
Labor Force Status: Recent Graduates	15
Geographic Distribution of the Labor Force	18
Field Mobility	18
Employment Sector: Total Graduates	21
Employment Sector: Recent Graduates	23
Primary Work Activity: Total Graduates	23
Primary Work Activity: Recent Graduates	28
Median Annual Salary, by Years Since Degree and Gender	29
Median Annual Salary, by Employment Sector and Gender	31
Academic Employment	34
EMPLOYMENT DYNAMICS	40
Employment Status	40
Employment Sector	42
Primary Work Activity	44
APPENDICES	
A: Sampling Frame	47
B: 1987 Survey of Humanities Doctorates Questionnaire	51
C: Sampling Error	57
D: Response Rates	65
E: Weighting Procedure	73
F: Fine Field of Employment	75

LIST OF TABLES

1 Distribution of Humanities Doctorates in the United States (1944-1986 Graduates), by Field of Degree and Field of Employment, 1987 4
2 Demographic Characteristics of Humanities of Ph.D.s (1944-1986 Graduates), by Field of Doctorate, 1987 (in percent) 7
3 Employment Status of Humanities Ph.D.s (1944-1986 Graduates), by Field of Doctorate, 1987 (in percent) 12
4 Employment Status of Humanities Ph.D.s (1981-1986 Graduates), by Field of Doctorate, 1987 (in percent) 14
5 Employment and Unemployment of Humanities Ph.D.s (1944-1986 Graduates) in the United States Labor Force, by Field of Doctorate, 1987 (in percent) 16
6 Employment and Unemployment of Humanities Ph.D.s (1981-1986 Graduates) in the United States Labor Force, by Field of Doctorate, 1987 (in percent) 17
7 Employment and Unemployment of Humanities Ph.D.s in the United States Labor Force, by Region, 1987 (in percent) 19
8 Field Retention and Mobility of Employed Humanities Doctorates 1944-1986 Graduates), 1987 (in percent) 20
9 Type of Employer of Humanities Ph.D.s, Time-Series: 1977-1987 (in percent) 22
10 Type of Employer of Humanities Ph.D.s (1944-1986 Graduates), by Field of Doctorate, 1987 (in percent) 24
11 Type of Employer of Humanities Ph.D.s (1981-1986 Graduates), by Field of Doctorate, 1987 (in percent) 25
12 Primary Work Activity of Humanities Ph.D.s, Time-Series: 1977-1987 (in percent) 26
13 Primary Work Activity of Humanities Ph.D.s (1944-1986 Graduates), by Field of Doctorate, 1987 (in percent) 27
14 Primary Work Activity of Humanities Ph.D.s (1981-1986 Graduates), by Field of Doctorate, 1987 (in percent) 30
15 Median Annual Salaries of Full-Time Employed Humanities Ph.D.s, by Gender, Years Since Ph.D., and Field of Doctorate, 1987 (in thousands of dollars) 32
16 Median Annual Salaries of Full-Time Employed Humanities Ph.D.s, by Gender, Type of Employer, and Field of Doctorate, 1987 (in thousands of dollars) 33
17 Academically Employed Humanities Doctorates, by Academic Position, Field of Doctorate, and Gender, 1987 (in percent) 37
18 Tenure Status of Academically Employed Humanities Ph.D.s, by Field of Doctorate, Age, and Gender, 1987 (in percent) 39
19 Rates of Changes and Continuity in Employment Status of Humanities Doctorates, Longitudinal Data from 1977 to 1979, 1981 to 1983, and 1985 to 1987 (in percent) 41
20 Rates of Changes and Continuity in Type of Employer of Humanities Doctorates, Longitudinal Data from 1977 to 1979, 1981 to 1983, and 1985 to 1987 (in percent) 43
21 Rates of Changes and Continuity in Primary Work Activity (PWA) of Humanities Doctorates, Longitudinal Data from 1977 to 1979, 1981 to 1983, and 1985 to 1987 (in percent) 45

LIST OF FIGURES

1	Regional Distribution of the U.S. Population of Humanities Doctorates, 1987	5
2	Age of Humanities Doctorates, Time-Series: 1977-1987	8
3	Distribution of Humanities Ph.D.s Employed in Nonhumanities Fields in 1987	22
4	Academic Position of Humanities Ph.D.s, Time-Series 1977-1987	35

INTRODUCTION

This report presents results from the sixth in a biennial series of surveys conducted on humanities doctorate recipients. This survey is part of the larger Survey of Doctorate Recipients (SDR) project, which began in 1973 in response to federal needs for information on the nation's doctoral population. At that time, the scope of the SDR project was restricted to the domains of science and engineering and included in its records system only those humanities doctorates who were employed in science or engineering disciplines. In 1977, however, the scope of the SDR project was expanded to include more comprehensively the country's doctoral-level humanists.

The purpose of the SDR project has been to develop and maintain a roster of research scholars in the domains under study, to estimate the number who reside in the United States, and to cultivate a system of information that characterizes their employment patterns, thereby providing a means for depicting one segment--a highly educated segment--of the United States labor force.

The roster of humanities research doctorates, compiled from the Doctorate Records File,[1] has been maintained by incorporating those doctorate recipients who earned their degrees in the United States during the 2-year period between surveys. Each updated roster, then, serves as the sampling frame from which a stratified random sample of doctorates is drawn and surveyed.

The SDR sample design provides for the assessment of both experienced degree-holders and new entrants into the doctoral labor force. Using a 42-year coverage span, new entrants are added to the target survey population, while recipients of degrees earned 43-44 years prior to the survey are excised from that target population. The remaining cohort, those whose degrees are 3-42 years old, form the project's longitudinal panel. By 1987, humanities doctorates in the longitudinal panel had been surveyed between one and five times, depending on their years of degree. Consequently, their survey responses contribute not only to the overall snapshot of the U.S. population of humanities doctorates at a given point in time, but also to our understanding of changes in the complexion of that population.

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[1]The Doctorate Records File, maintained by the National Research Council, contains a virtual census of all research doctorates earned in the United States since 1920. While the roster of humanities doctorates is developed exclusively from this file, the roster of science and engineering doctorates was developed originally from sources in addition to this file.

In 1987, 15,535 doctorates composed the longitudinal portion of the humanities sample while another 1,061 formed the sample of new doctorates, yielding a total sample of 16,416 (see Appendix A for discussion of the sample). The 1987 Survey of Humanities Doctorates, a self-report, mail survey instrument designed to elicit employment information of interest (see Appendix B), was mailed to that sample in March 1987. Follow-up mailings to nonrespondents were conducted in April and September of 1987. Subsequently, responses received from the sample were weighted to develop population estimates of humanities doctorates residing in the United States in February 1987, the point of reference for most items on the 1987 survey instrument (see Appendices C-E for more on the methodology of the survey).

A digest of the resulting survey estimates is presented in the body of this report, beginning with a tableau of the population's field, geographic, and demographic characteristics, which is followed by a profile of employment characteristics of the working population. The final section of the report is devoted to an analysis of the portion of the longitudinal panel who have provided information in two consecutive surveys. Selections of their paired responses are presented to illustrate the relative degree to which the job world of humanities scholars is a changing or an unchanging one.

DOCTORAL POPULATION

By Field

In February 1987, an estimated 95,000 humanities doctorate recipients were residing in the United States. This number reflects the population of doctorate-holders who earned U.S. degrees in a humanities field[2] from January 1944 through June 1986. Between 1985 and 1987, the humanities doctoral population grew by 4.9 percent, representing the lowest 2-year growth since these data first were collected. However, this slowed growth is consistent with the overall decline in the number of humanities Ph.D.s awarded in the United States in the mid-1970s to early 1980s and the leveling in the number of degrees conferred since then.[3]

Table 1 shows the distribution of humanities doctorates in 1987 by their fields of degree and employment. Doctorates in English/American languages and literature constituted the largest group by degree field (at 25.9 percent of the total). The second largest was modern languages and literature (at 17.4 percent), followed by "other history" (at 13.1 percent) and American history (at 10.0 percent). With few exceptions, the composition by degree field has been relatively stable since 1977. Minor shifts occurred in American history and music (a growth for each of approximately 2 percentage points), in the collected group of "other humanities" (a growth of about 3 percentage points), and in "other history" and English/American languages and literature (declines of approximately 4 and 2 percentage points, respectively).

Of the total number of doctorates, 66.2 percent were employed in a humanities field in 1987. An additional 22.3 percent were employed in fields outside the humanities classification--an increase from the 19.9 percent who were similarly employed in 1985--and another 10.4 percent were not employed. Finally, the remaining 1.0 percent did not report either their employment status or their employment field.

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[2]The categories for the humanities include American history; "other history" (history and philosophy of science plus all history except American history); art history; music; speech/theater; philosophy; English/American languages and literature; classical languages and literature; modern languages and literature; and "other humanities" (linguistics, archeology, American studies, religious studies, and unspecified other humanities).

[3]Coyle, S.L., and Y. Bae, Summary Report 1986: Doctorate Recipients from United States Universities, Washington, D.C.: National Academy Press, 1987.

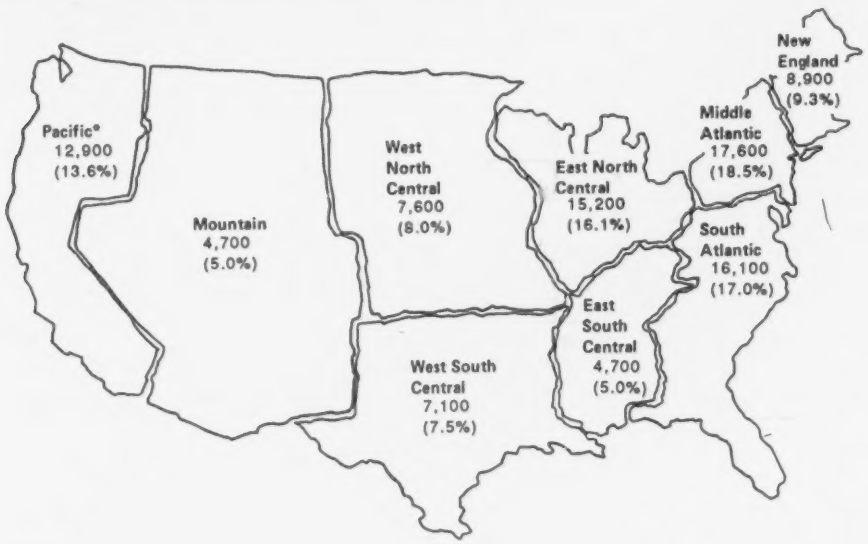
TABLE 1: Distribution of Humanities Doctorates in the United States (1944-1987 Graduates), by Field of Degree and Field of Employment, 1987

	Field of Degree		Field of Employment	
	N	%	N	%
All Fields (N)	95,000	100.0	95,000	100.0
American History	9,500	10.0	6,100	6.4
"Other History"**	12,500	13.1	7,700	8.1
European History	5,800	6.1	3,500	3.7
Other History	4,600	4.8	3,200	3.3
History/Philosophy of Science	500	0.5	1,000	1.1
Unspecified History	1,700	1.7	***	--
Art History	2,800	2.9	2,200	2.3
Music	7,400	7.8	5,800	6.1
Speech/Theater	4,100	4.3	2,400	2.5
Philosophy	7,200	7.6	4,500	4.7
English and American Lang/Lit	24,600	25.9	15,900	16.7
Classical Lang/Lit	1,900	2.0	1,400	1.4
Modern Lang/Lit	16,600	17.4	10,800	11.4
"Other Humanities"	8,400	8.9	6,300	6.6
Linguistics	2,700	2.9	1,100	1.2
American Studies	1,800	1.9	400	0.4
Religious Studies	2,000	2.1	1,700	1.8
Unspecified Other Humanities	1,800	1.9	3,100	3.2
Nonhumanities			21,200	22.3
No Report on Employment Field			800	0.9
Not Employed			9,900	10.4
No Report on Employment Status			100	0.1

*Includes postdoctoral appointees as well as doctorates employed full-time and part-time. See Appendix F for a listing of fine fields.
**"Other History" includes the subfields listed. Other History, one of those subfields, includes all history except America and European.
***"Unspecified History" was not an option on the 1987 questionnaire.
NOTE: Numbers are rounded to the nearest hundred; therefore, subcategories may not add to totals.

Geographic Differences

The geographic dispersion of humanities doctorates across the major regions of the United States (Figure 1) was essentially the same as that of the entire U.S. population, with the exception of both New England (which had only 5.3 percent of the general population but 9.3 percent of the humanities doctorates) and the West South Central region (which had 11.1 percent of the general population but only 7.5 percent of the humanists).[4] Moreover, the dispersion of humanities doctorates observed in 1987 changed little from that observed in 1985; in fact, the 1987 figures were all within 1 percentage point of those for 1985. The Middle Atlantic states had the highest concentration of humanists with 17,600 (or 18.5 percent) occupying that region, while the Mountain and East South Central states had the lowest concentration with approximately 4,700 humanists (or 5.0 percent) occupying each of those regions.


New England 8,900 (9.3%)
Middle Atlantic 17,600 (18.5%)
Pacific* 12,900 (13.6%)
West North Central 7,600 (8.0%)
East North Central 15,200 (16.1%)
Mountain 4,700 (5.0%)
South Atlantic 16,100 (17.0%)
East South Central 4,700 (5.0%)
West South Central 7,100 (7.5%)

*Includes Alaska and Hawaii

NOTE: Estimated population of 1944-1986 Humanities Ph.D.s in the United States = 94,700 excluding 300 in U.S. possessions. By region, Census Bureau estimates for the total U.S. population in 1987 are broken down as follows: New England, 5.3 percent; Middle Atlantic, 15.4 percent; East North Central, 17.2 percent; West North Central, 7.2 percent; South Atlantic, 17.1 percent; East South Central, 6.3 percent; West South Central, 11.1 percent; Mountain, 5.4 percent; and Pacific, 15.0 percent.

Figure 1. Regional distribution of the U.S. population of humanities doctorates, 1987.

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[4] Estimates of the U.S. population were provided by the Census Bureau, U.S. Department of Commerce.

Demographic Characteristics

The representation of women in the U.S. population of humanities doctorates continued to increase both in number and percent, with the latter indicating gains greater than for the doctoral population as a whole. Women humanists constituted nearly one-third (30.9 percent) of all humanities doctorates (see Table 2); this fraction compares with the low of 23.9 percent observed in the first humanities survey, conducted in 1977. Furthermore, the gains made by women occurred within nearly all fields, with art history and "other humanities" having the largest percentage point growths in the last decade (from 40.8 percent of the total in 1977 to 53.4 percent in 1987 for art historians and, over the same time period, from 25.1 percent of the total to 35.4 percent for doctorates in "other humanities").[5]

In terms of the overall gender composition in 1987, art history had the highest percentage of women (53.4 percent) and was the only field where women comprised more than half of the total group. Modern languages and literature was second, with 44.4 percent being women doctorates. In contrast, the fields of American history and philosophy had the lowest percentages of women at 14.9 percent and 15.6 percent, respectively.

While women have continued to make inroads in their representation within the population of humanities doctorates, the racial/ethnic composition of this population has changed very little in the history of the survey. Although for total minorities combined, the number of U.S. residents with humanities Ph.D.s has doubled since 1977 (from approximately 3,100 to 6,200), the percentage-point increase was less dramatic (from 4.7 percent of the 1977 total to 6.5 percent of the 1987 total), particularly when one considers that this slight percentage-point gain represents the cumulative growth for Hispanics, blacks, Asians, American Indians/Alaskan Natives, and individuals of combined races, all of whom increased their individual shares in smaller proportions.

Across fields, the only notable growth in the minority composition occurred for Hispanics in modern languages and literature. Hispanics, who take modern language degrees primarily in Spanish, have steadily increased their representation in this category. Beginning with 7.4 percent in 1977, their proportion grew to 8.7 percent in 1979, to 9.5 percent in 1981, to 10.3 percent in 1983, to 10.6 percent in 1985, and to 11.2 percent in 1987. Due to this Hispanic contingent, in 1987 modern languages and literature had the highest minority representation (a total of 14.7 percent) among the various disciplines.

Blacks, on the other hand, had the highest percentage, among minority groups, in American history (3.1 percent), music (3.6 percent), speech/theater (2.4 percent), and English/American languages and literature (1.5 percent). Similarly, Asians were highest in art history (2.3 percent), philosophy (2.3 percent), and "other humanities" (2.9 percent). Native Americans, however, consistently comprised the smallest minority group across all fields.

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[5]The representation of women has decreased--albeit negligibly--in only one field, American history (from 15.8 percent in 1977 to 14.9 percent in 1987).

TABLE 2: Demographic Characteristics of Humanities Ph.D.s (1944-1986 Graduates), by Field of Doctorate, 1987 (in percent)

Demographic Characteristics	All Fields	Field of Doctorate: Amer History	"Other History"	Art History	Music	Speech/ Theater	Phil-osophy	English/ Amer Lang & Lit	Clas-sical Lang & Lit	Modern Lang & Lit	"Other Human-ities"
Total Population (N)	95,000	9,500	12,500	2,800	7,400	4,100	7,200	24,600	1,900	16,600	8,400
Gender											
Male	69.1	85.1	79.3	46.6	76.7	75.2	84.4	63.1	69.7	65.6	64.6
Female	30.9	14.9	20.7	53.4	23.3	24.8	15.6	36.9	30.3	44.4	35.4
Racial/Ethnic Group											
White	93.0	94.7	94.0	94.7	93.9	95.5	95.5	95.7	98.3	85.1	91.5
Minority Group	6.5	4.3	5.7	5.1	5.9	3.9	4.4	3.8	1.7	14.7	7.5
Hispanic	3.0	0.6	1.7	1.5	0.6	0.3	1.3	1.3	0.5	11.2	2.4
Black	1.8	3.1	1.7	1.1	3.6	2.4	0.4	1.5	0.7	1.5	2.0
Asian	1.4	0.5	1.6	2.3	1.4	0.5	2.3	0.9	0.1	1.8	2.9
American Indian	0.2	0.1	0.6	0.1	0.3	0.7	0.3	0.1	0.4	0.2	0.2
Other	0.1	0.3	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.1
No Report	0.4	0.7	0.3	0.1	0.1	0.5	0.1	0.4	0.0	0.2	0.9
Age in 1987											
Under 30	0.2	0.0	0.3	0.0	0.1	0.0	0.4	0.0	0.6	0.1	0.5
30-39	17.3	12.8	13.2	23.3	24.8	12.7	18.2	16.3	16.7	16.7	25.7
40-49	39.8	42.6	38.3	40.8	37.5	33.4	42.1	39.0	40.6	39.9	43.0
50-59	23.9	25.1	28.9	20.8	22.2	25.5	21.6	24.7	23.0	23.1	18.2
60 and over	18.4	19.5	18.5	14.4	14.2	27.5	17.3	19.7	18.9	19.7	12.3
No Report	0.5	0.0	0.9	0.7	1.1	0.8	0.4	0.3	0.3	0.5	0.2
Median Age (Years)	47	48	48	45	45	51	46	48	47	48	44
Year of Doctorate											
1944-1949	2.1	1.9	3.6	0.8	0.8	1.9	2.1	2.3	3.3	2.2	0.9
1950-1959	9.5	13.5	10.3	6.7	6.2	10.2	10.7	9.2	11.0	9.2	7.2
1960-1969	21.4	23.1	25.3	15.0	14.2	30.6	22.8	23.5	29.0	19.1	12.8
1970-1979	44.4	45.0	42.9	47.6	44.2	35.9	44.0	45.6	39.2	47.2	42.1
1980-1986*	22.7	16.5	17.9	29.9	34.6	21.4	20.4	19.4	17.6	22.3	37.1
1980 (1/80-6/80)	2.2	1.7	2.2	2.1	2.4	1.8	1.8	2.2	2.3	1.7	3.7
1981-1982 (7/80-6/82)	7.0	4.8	6.3	9.4	9.7	6.4	6.6	6.2	5.9	7.6	9.4
1983-1984 (7/82-6/84)	6.8	5.0	5.3	9.9	11.0	6.9	5.9	5.4	4.9	7.1	10.9
1985-1986 (7/84-6/86)	6.7	5.0	4.1	8.5	11.5	6.3	6.1	5.6	4.5	5.9	13.1
Citizenship											
U.S.	97.0	99.1	98.6	94.7	98.0	98.3	97.4	98.5	96.2	92.2	96.7
Foreign**	2.9	0.9	1.4	5.3	2.0	1.6	2.6	1.4	3.8	7.8	3.3
No Report	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0

*Excludes Ph.D.s awarded from 7/86 to 12/86.

**In view of the lack of a comprehensive sampling frame for foreign-earned Ph.D.s in the United States, the number of humanities Ph.D.s who are foreign citizens may be somewhat underestimated.

Though trends in the racial/ethnic mix have remained relatively stable, the age distribution of humanities doctorates has shifted markedly over the survey period. As shown in Figure 2, the proportion of doctorate holders who were under age 40 has been declining, while that for the 40 and older group has been, alternatively, on the rise. Particularly noteworthy was the shift in degree-holders in their thirties. Once the highest proportion of humanists (35.0 percent), in 1987 this age group was nearly the lowest proportion (17.3 percent), with only those in the historically small age group under 30 years old registering lower (0.2 percent).

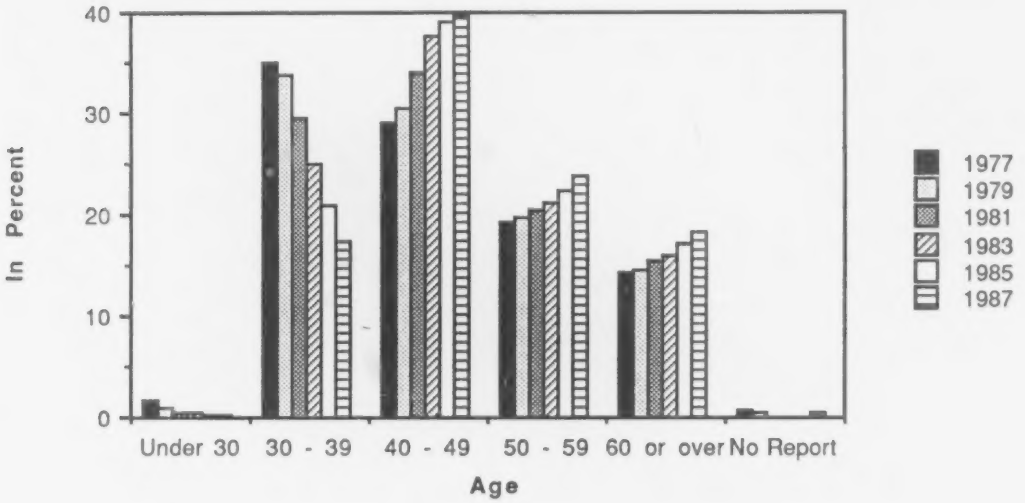

Figure 2. Age of humanities doctorates, time-series: 1977-1987.

Interestingly, the age trend for humanists does not directly follow that of the larger U.S. population, even when people under age 30 are omitted from the total base in both the U.S. population and the humanities doctoral population. Of the 130,771,000 people in the 1987 U.S. population who were 30 years of age or older, 30.6 percent were in their thirties (up 4.5 percentage points from the 107,195,000 people who were 30 or older in 1977); 21.4 percent were in their forties (up 0.2 percentage points from 1977); 16.9 percent were in their fifties (down 4.6 percentage points from 1977); and 31.2 percent were 60 or older (no change from 1977).[6] Since the number of humanists under age 30 is so small, their omission from the humanities base effects no real change in the percentages reported in Table 2 for the remaining age groups.

Given the age trend disparity between humanities doctorates and the U.S. population of which they form a part, the observed age shift for humanists is clearly not a function of the larger demographic trends in

[6]Estimates of the U.S. population were provided by the Census Bureau, U.S. Department of Commerce.

the country. Instead, it is more narrowly confined to the decline in humanities degrees earned in the mid-1970s to early 1980s, coupled with the increasing age at which the average humanist earned the doctorate. To elaborate, annual production of humanities doctorates declined from roughly 5,400 in 1973--the peak year for conferred degrees--to roughly 3,500 in 1982 and has remained fairly stable since then. Median age at degree, however, has grown steadily from 32 years of age in 1973 to 35 years of age in 1986.[7]

Across fields, music, art history, and "other humanities" had proportionately more young doctorates than the remaining disciplines. When year of doctorate is examined, these three fields were comprised of the highest proportions of individuals who earned their degrees in the 1980s (34.6 percent, 29.9 percent, and 37.1 percent, respectively) and the lowest proportion of those who earned their degrees in the 1940s, 1950s, or 1960s. In contrast, speech/theater had the highest proportion of older doctorates, with 53 percent of its degree-holders falling at age 50 or greater. Correspondingly, many in this field (nearly 43 percent) earned their degrees prior to 1970.

In addition to shedding light on the current age composition of humanities doctorates, trends in degree year serve as a measure of a field's robustness over time. Table 2 provides a percentage breakdown of the U.S. humanities population by the decades in which these individuals earned their degrees. Because the coverage span for the 1987 survey begins in January 1944 and ends in June 1986, data for both the 1940s and the 1980s represent less than a full decade. Further, to illustrate recent trends, the three most recent 2-year cohorts of graduates that were residing in this country in 1987 are shown individually, as well as being represented in the total for the 1980s. To date, the 1970s produced the largest number of humanities doctorates. Approximately 42,200 humanities doctorates residing in the United States in 1987 earned their degrees in the 1970s. This number represents roughly 44 percent of the total humanities population. U.S. residents who earned their doctorates in the 6 1/2 years measured thus far for the 1980s represent nearly 23 percent of the total, already reaching the proportion of degree recipients from the 1960s. However, if the average 2-year production of doctorate degree-holders who remain in this country continues at the current rate throughout the rest of the 1980s, the 1970s will still represent the decade of the humanities doctorate, at least in terms of the number who were educated here and live here as well.

This pattern is less evident for music, speech/theater, and "other humanities," however, where competitively high proportions of degree-holders have earned their degrees during the 1980s (34.6 percent, 21.4 percent, and 37.1 percent, respectively) as compared with the 1970s (44.2 percent, 35.9 percent, and 42.1 percent, respectively). Recent cohorts (i.e., 1981-1982, 1983-1984, 1985-1986) in both music and "other humanities" appear to be claiming higher proportions of the totals in their respective fields; if that trend continues, the percentage of

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[7] These figures were drawn from the Doctorate Records File, described earlier.

graduates in those fields who earned degrees in the 1980s may actually exceed those whose degrees were earned in the 1970s.

Finally, we examine the composition of the humanities population according to citizenship status. As compared with roughly 6 percent of science/engineering doctorates, only 2.9 percent of the humanities doctorates residing in the United States in February 1987 were citizens of foreign countries. While this fraction has varied negligibly over time, it does vary considerably by field. For instance, in modern languages and literature--a fairly sizable field category--7.8 percent of doctorates were foreign citizens, a considerably higher figure than for all fields combined. As this category is comprised of German, Russian, French, Spanish and Portuguese, and Italian, as well as other languages, its foreign component holds citizenship, not surprisingly, in a number of foreign lands. However, most (nearly three-fifths) hail from Western and Central Europe.

Art history, one of the smaller fields in the humanities classification, was represented by 5.3 percent foreign citizens, with about half of this proportion maintaining citizenship in either Canada or England. Lower in their foreign citizen components, though still higher than the total group, were classical languages and literature (3.8 percent) and "other humanities" (3.3 percent). Roughly three-fifths of the classicists were English or Canadian. In "other humanities," there was greater continental dispersion in citizenship country, with the largest portion, over one-fourth, hailing from South America.

As noted at Table 2, however, the SDR survey does not include a comprehensive sampling frame for recipients of foreign-earned humanities doctoral degrees, who indeed may be citizens of foreign countries who live in the United States. Therefore, the percentages of foreign citizens in the U.S. humanities population may be underestimated.

EMPLOYMENT

Employment Status: Total Graduates

Approximately 81 percent of the 95,000 humanities doctorates residing in the United States in February 1987 were employed full-time. This proportion represents a slight decrease from the 83 percent who were working full-time in 1985; however, the full-time component has been less than consistent over time, fluctuating slightly from survey year to survey year (82.0 percent in 1983, 83.4 percent in 1981, 81.6 percent in 1979, and 83.0 percent in 1977). In fact, with the possible exceptions of part-time employment and retirement, this observation held for virtually all employment status categories (see Table 3 for a listing of these categories).

To elaborate on these possible exceptions, the percentage employed part-time went from a low of 4.9 percent in 1977 to a high of 7.8 percent in 1987, but only the last three surveys have shown continued growth, albeit slight, from the surveys immediately preceding them (from 6.0 percent in 1981 to 6.7 percent in 1983, then to 7.1 percent in 1985, and, finally, to 7.8 percent in 1987). The pattern observed for the early years, alternatively, was a bit more tenuous: part-time employment increased nearly two percentage points from 1977 to 1979 (to 6.7 percent), dropped roughly a point by 1981 (to 6.0 percent), and then grew a point in 1983 back to the level observed in 1979 (6.7 percent). While the more recent data suggest that part-time employment is on the rise, the small gains in this category, together with the fluctuations observed earlier in the series, weakens that conclusion. Indeed, it seems equally plausible, at this point, that the incidence of part-time employment could be stabilizing at around 6-7 percent.

A similar case can be made for retirement. In 1977, 5.8 percent of U.S. humanists were retired; this remained fairly stable through 1981 (with a 6.0 percent retirement rate in 1979 and a 5.8 percent retirement rate in 1981), dropped slightly by 1983 (to 5.3 percent), then started climbing in the last two survey years (to 6.2 percent in 1983 and to 7.6 percent in 1987). While the growing proportion of humanists of retirement age suggests that growth in retirement rates are inevitable, the pattern of change in these rates does not directly follow the pattern of growth in the group aged 60 or older. One obvious reason for the disagreement in the two patterns is that many of the older humanities doctorates remain active in the labor force well beyond retirement age.

In terms of field differences in employment status in 1987, philosophy doctorates had the highest rate of full-time employment at 86.4 percent, and art history had the lowest at 76.1 percent (see Table 3). In general, humanists who were not employed full-time were either working

TABLE 3: Employment Status of Humanities Ph.D.s (1944-1986 Graduates), by Field of Doctorate, 1987 (in percent)

Employment Status	All Fields	Field of Doctorate									
		Amer History	"Other History"	Art History	Music	Speech/ Theater	Phil- osophy	English/ Amer Lang & Lit	Clas- sical Lang & Lit	Modern Lang & Lit	"Other Human- ities"
Total Population (N)	95,000	9,500	12,500	2,800	7,400	4,100	7,200	24,600	1,900	16,600	8,400
Employed Full-Time	80.9	82.1	79.7	76.1	80.7	78.6	86.4	81.4	85.2	78.3	81.6
Employed Part-Time	7.8	4.2	10.4	9.3	9.6	7.6	5.7	7.0	6.1	8.4	9.3
Postdoctoral Appointment*	0.8	1.1	0.5	1.4	0.1	0.0	1.1	0.9	0.6	0.7	1.0
Not Employed**	10.4	12.6	9.1	12.9	9.6	13.4	6.7	10.5	8.1	12.5	7.9
Seeking Employment	1.1	1.3	0.8	3.4	1.6	0.8	0.9	0.8	0.9	1.1	1.2
Not Seeking Employment	1.5	0.4	1.6	3.4	0.9	0.8	1.6	1.7	1.8	1.7	1.7
Retired	7.6	10.9	6.5	5.6	6.6	11.5	4.1	8.0	5.0	9.3	4.7
Other	0.2	0.0	0.2	0.6	0.4	0.3	0.1	0.0	0.4	0.4	0.3

*The percentages of postdoctoral appointees may be underestimated because information about foreign Ph.D.s who came to the U.S. for post-doctoral research or study is incomplete.
**Percentages are not unemployment rates because they are calculated on the total population, which includes those retired, those not seeking employment, and those not reporting status, none of whom are considered part of the labor force in this report.

part-time or were retired, as opposed to furthering their studies in postdoctoral appointments, seeking jobs, or just not working. Retirement was highest in speech/theater (11.5 percent), American history (10.9 percent), modern languages and literature (9.3 percent), and English/American languages and literature (8.0 percent). Part-time employment, on the other hand, was most prevalent in the categories "other history" (10.4 percent), music (9.6 percent), art history (9.3 percent), and other humanities (9.3 percent).

Employment Status: Recent Graduates

When one compares the status of recent graduates (in this analysis, those who earned degrees from 1981 through 1986)[8] with the total population, some differences are observed (see Table 4). First, part-time employment was higher for recent graduates than for the humanities population as a whole (13.3 percent compared with 7.8 percent), with recent graduates constituting one-third of part-timers in the total population but under one-fifth of that total population. Second, as might be expected, postdoctoral appointments were more likely among recent graduates than they were for the total group (2.5 percent compared with 0.8 percent); roughly three-fifths of all postdoctoral appointees were recent graduates. Third, retirement was predictably negligible for recent graduates.

This general pattern of difference between recent and total graduates held for the fields of American history, music, and modern languages and literature. The categories "other history," philosophy, English/American languages and literature, and "other humanities," while following this pattern, showed differences in other categories as well. The percentages of full-time employment for recent graduates in these four fields were lower than those for total graduates (by roughly 3 percentage points for both English/American languages and literature and "other humanities," by roughly 4 percentage points for "other history," and by 6 percentage points for philosophy).

In the remaining three fields--art history, speech/theater, and classical languages and literature (the three smallest humanities disciplines)--full-time employment was proportionately higher among recent graduates than among total graduates. The difference in art history was slight, however.

Labor Force Status: Total Graduates

So that rates of employment and unemployment may be illustrated, a proportional distribution of the labor force--defined as the total of full-timers, part-timers, postdoctoral appointees, and those who were unemployed but seeking work--is provided in Table 5. In 1987, an

[8]This time frame is selected both to allow adequate disaggregation in estimates of recent graduates and to maintain consistency with earlier reports in this series.

TABLE 4: Employment Status of Humanities Ph.D.s (1981-1986 Graduates), by Field of Doctorate, 1987 (in percent)

Employment Status	All Fields	Field of Doctorate: Amer History	"Other History"	Art History	Music	Speech/ Theater	Phil-osophy	English/ Amer Lang & Lit	Clas-sical Lang & Lit	Modern Lang Lit	"Other Human-ities"
Total Population (N)	17,900	1,300	1,800	700	2,300	700	1,200	3,800	300	3,100	2,700
Employed Full-Time	79.1	81.7	76.0	77.1	80.5	82.8	80.4	78.2	92.9	78.4	78.4
Employed Part-Time	13.3	12.9	13.0	11.0	14.2	12.2	6.1	14.1	3.7	15.3	14.9
Postdoctoral Appointment*	2.5	3.2	1.9	1.9	0.0	0.0	5.3	4.1	0.0	2.0	2.4
Not Employed**	4.8	2.2	9.1	10.0	5.3	4.5	8.2	2.7	3.3	4.2	3.8
Seeking Employment	1.8	2.1	3.0	6.0	3.4	3.4	1.7	0.0	1.1	1.3	1.3
Not Seeking Employment	2.1	0.2	5.2	3.4	1.2	0.7	6.5	1.9	2.2	1.0	1.4
Retired	0.6	0.0	1.0	0.0	0.5	0.0	0.0	0.8	0.0	0.9	0.7
Other	0.3	0.0	0.0	0.0	0.0	0.5	0.0	0.8	0.0	0.1	0.6

*The percentages of postdoctoral appointees may be underestimated because information about foreign Ph.D.s who came to the U.S. for post-doctoral research or study is incomplete.
**Percentages are not unemployment rates because they are calculated on the total population, which includes those retired, those not seeking employment, and those not reporting status, none of whom are considered part of the labor force in this report.

estimated 86,000 humanities doctorates were in the labor force. Of those, 89.3 percent were employed full-time; 8.6 percent were employed part-time; less than 1 percent were on postdoctoral appointments; and 1.2 percent were unemployed (see Table 5).

Among the approximately 7,400 part-timers, roughly 38 percent (or 3.3 percent of the total labor force) were seeking full-time work, and another 56 percent (or 5.3 percent of the total labor force) indicated that they were not seeking full-time employment. Across fields, part-timers with doctorates in music were the only group in which more than half of the individuals were seeking full-time employment; in modern languages and literature and in "other humanities," there were equal splits on the "seeking" versus "not seeking" status.

Additional data gathered on part-time workers showed that, on average, roughly 11 percent worked 40 or more hours per week (most of these individuals held more than one part-time position); 14 percent of the part-timers worked between 30 and 39 hours per week; 21 percent worked between 20 and 29 hours per week; 19 percent worked between 10 and 19 hours per week; and 22 percent worked 9 or fewer hours per week. The remaining 13 percent did not indicate the number of hours that they worked. As such, percentages cited for average hours per week are somewhat understated.

In terms of unemployment rates, all fields but one ranged from roughly 1 to 2 percent unemployment, with most falling at the lower limit of that range. The exception was art history, which registered a nearly 4 percent unemployment rate.

When unemployment rates are combined with rates of part-timers seeking full-time employment, modern languages and literature, "other humanities," art history, and music were highest among the disciplines in their proportions of doctorates actively seeking to change their employment status, with rates of 5.9 percent, 6.2 percent, 6.9 percent, and 7.5 percent, respectively.

Labor Force Status: Recent Graduates

As with the data on employment status, the labor force distribution of recent graduates is displayed separately (see Table 6). Compared to the total labor force, the rate of full-time employment was lower among recent graduates than among total graduates (81.8 percent compared with 89.3 percent). Part-time employment, on the other hand, was higher among recent graduates than among total graduates (13.8 percent compared to 8.6 percent). Moreover, about 65 percent of the recent graduates who were in the part-time status (or 8.9 percent of the recent labor force total) were seeking full-time employment; this compares with only 38 percent of part-timers in the total labor force (or 3.3 percent of the labor force total). Indeed, of doctorates in the total labor force who were working part-time but seeking full-time jobs, over half were recent graduates. Across fields, part-time workers in the recent cohort were, in general, more likely than not to be seeking full-time jobs. In fact, the only exceptions to this were in the fields of art history and English/American languages and literature.

TABLE 5: Employment and Unemployment of Humanities Ph.D.s (1944-1986 Graduates) in the United States Labor Force, by Field of Doctorate, 1987 (in percent)

		Field of Doctorate									
Employment Status	All Fields	Amer History	"Other History"	Art History	Music	Speech/ Theater	Phil- osophy	English/ Amer Lang & Lit	Clas- sical Lang & Lit	Modern Lang & Lit	"Other Human- ities"
1987 Ph.D. Labor Force*(N)	86,000	8,400	11,400	2,500	6,800	3,600	6,800	22,200	1,800	14,700	7,800
Employed Full-Time	89.3	92.6	87.2	84.3	87.7	90.3	91.7	90.3	91.8	88.5	87.7
Employed Part-Time	8.6	4.8	11.4	10.3	10.5	8.8	6.1	7.8	6.5	9.5	10.0
Seeking Full-Time	3.3	1.6	3.7	3.1	5.7	2.7	2.3	2.1	1.9	4.7	4.9
Not Seeking Full-Time**	5.3	3.1	7.7	7.3	4.7	6.0	3.8	5.8	4.7	4.8	5.0
Postdoctoral Appointment	0.8	1.2	0.5	1.6	0.1	0.0	1.2	1.0	0.6	0.8	1.1
Unemployed/Seeking	1.2	1.5	0.9	3.8	1.8	0.9	1.0	0.8	1.0	1.2	1.3

*Includes full-time and part-time employed, postdoctoral appointees, and those seeking employment.
**Includes those who did not report whether they were seeking full-time employment.

TABLE 6: Employment and Unemployment of Humanities Ph.D.s (1981-1986 Graduates) in the United States Labor Force, by Field of Doctorate, 1987 (in percent)

Employment Status	All Fields	Field of Doctorate: Amer History	"Other History"	Art History	Music	Speech/ Theater	Phil-osophy	English/ Amer Lang & Lit	Clas-sical Lang & Lit	Modern Lang & Lit	"Other Human-ities"
1987 Labor Force* (N)	17,300	1,300	1,700	700	2,200	700	1,200	3,700	300	3,000	2,600
Employed Full-Time	81.8	81.8	81.0	80.3	82.1	84.2	86.0	81.1	95.1	80.8	80.9
Employed Part-Time	13.8	12.9	13.8	11.4	14.5	12.4	6.5	14.6	3.8	15.7	15.3
Seeking Full-Time	8.9	7.5	11.1	5.3	10.9	8.5	6.5	5.5	3.8	10.7	1.7
Not Seeking Full-Time**	4.9	5.4	2.7	6.1	3.6	3.9	0.0	9.1	0.0	5.0	3.6
Postdoctoral Appointment	2.5	3.2	2.0	2.0	0.0	0.0	5.7	4.3	0.0	2.1	2.5
Unemployed/Seeking	1.9	2.1	3.2	6.3	3.4	3.4	1.8	0.0	1.1	1.4	1.3

*Includes those employed full-time or part-time, postdoctoral appointees, and those seeking employment.
**Includes those who did not report whether they were seeking full-time employment.
NOTE: Numbers are rounded to the nearest hundred; therefore, subcategories may not add to totals.

In all fields except English/American languages and literature, unemployment was higher among the recent cohort than it was among the total labor force, and in those same fields, recent graduates were a higher proportion of the total unemployed labor force than they were of the labor force total. For instance, recent graduates in art history constituted 28 percent of the total labor force of art historians, but they were 46 percent of all unemployed art historians.

Geographic Distribution of the Labor Force

The geographic dispersion of the labor force was essentially the same as that of the total population of humanists (see p. 5). While there was some regional variation in labor-force status, the variation occurred primarily in rates of full-time versus part-time employment (see Table 7). The West South and West North Central regions were highest in their rates of full-time employment (92.3 percent and 92.1 percent, respectively) and relatively low in their part-time rates (7.1 percent and 6.5 percent, respectively). On the opposite end was the Pacific region (with a full-time rate of 84.1 percent and a part-time rate of 13.9 percent). In addition to having the lowest full-time and highest part-time rates, the Pacific region also had the highest rates both of unemployment (1.9 percent) and of part-timers seeking full-time employment (7.0 percent), suggesting that, relative to other regions, the supply of humanities Ph.D.s was slightly more likely to exceed the labor-market demand for them in this region.

Field Mobility

So that employment characteristics of humanists may be described, the field of focus is narrowed from the labor force of humanities doctorates to those who were actually working. In February 1987, an estimated 85,000 humanists were employed. This group constituted the vast majority of the humanities labor force (98.8 percent) and a large fraction (89.4 percent) of the total population of humanities doctorates.

Among the employment characteristics to be examined is employment field. Table 8 shows the distribution across employment fields for doctorates in each humanities discipline. For purposes of this discussion, the extent to which these doctorates are employed in their fields of degree shall be considered field retention and the extent to which they work outside those degree fields shall be considered field mobility.

Across the various fields, music and art history had the highest retention rates (85.3 percent and 81.9 percent, respectively). Conversely, the aggregated classification, "other humanities," had the lowest retention rate (37.9 percent), with 11 percent of these doctorates working in English/American languages and literature and a full 36 percent working in fields outside the humanities classification.

In fact, for all fields, mobility into nonhumanities fields was the most prevalent type of movement. Indeed, the only other notable mobility within the humanities classification occurred where it was most expected--

TABLE 7: Employment and Unemployment of Humanities Ph.D.s in the United States Labor Force, by Region, 1987 (in percent)

1987 Location (Region)	Total Ph.D. Labor Force (N)*	1987 Labor Force Status			
		Employed Full-Time	Employed Part-Time	Postdoctoral Appointment	Unemployed & Seeking Employment
All Regions	86,000	89.3	8.6	0.8	1.2
New England	8,100	87.0	10.7	1.1	1.2
Middle Atlantic	16,200	88.1	9.4	1.1	1.5
East North Central	13,600	91.8	6.5	1.0	0.7
West North Central	6,900	92.1	6.5	0.8	0.6
South Atlantic	14,700	90.9	7.0	0.9	1.2
East South Central	4,300	90.2	7.8	0.4	1.5
West South Central	6,400	92.3	7.1	0.2	0.4
Mountain	4,200	90.1	6.7	1.5	1.7
Pacific	11,300	84.1	13.9	0.1	1.9
U.S. Possessions	200	83.7	12.6	3.7	0.0

*Includes those employed full-time or part-time, postdoctoral appointees, and those seeking employment.
NOTE: Numbers are rounded to the nearest hundred. Therefore, subcategories may not add to totals. Regions by state are as follows: New England (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont); Middle Atlantic (New Jersey, New York, Pennsylvania); East North Central (Illinois, Indiana, Michigan, Ohio, Wisconsin); West North Central (Iowa, Kansas, Minnesota, Missouri, North Dakota, Nebraska, South Dakota); South Atlantic (Delaware, District of Columbia, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, West Virginia); East South Central (Kentucky, Alabama, Mississippi, Tennessee); West South Central (Arkansas, Louisiana, Oklahoma, Texas); Mountain (Arizona, Colorado, Idaho, Montana, New Mexico, Nevada, Utah, Wyoming); and Pacific (Alaska, California, Hawaii, Oregon, Washington).

TABLE 8: Field Retention and Mobility of Employed Humanities Doctorates (1944-1986 Graduates), 1987 (in percent)

1987 Field of Employment	Total Employed*	Field of Doctorate: Amer History	"Other History"	Art History	Music	Speech/ Theater	Phil- osophy	English/ Amer Lang & Lit	Clas- sical Lang & Lit	Modern Lang & Lit	"Other Human- ities"
All Fields (N)	85,000	8,300	11,300	2,400	6,700	3,500	6,700	22,000	1,800	14,500	7,700
American History	7.1	58.7	8.0	0.0	0.0	0.3	0.0	0.1	0.2	0.1	3.3
"Other History"	9.1	12.0	57.3	0.2	0.1	0.0	0.2	0.1	2.2	0.4	1.2
Art History	2.6	0.0	0.3	81.9	0.3	0.0	0.0	0.0	0.7	0.2	1.3
Music	6.8	0.0	0.0	0.0	85.3	0.3	0.0	0.0	0.0	0.3	0.1
Speech/Theater	2.8	0.0	0.4	0.8	0.0	60.1	0.0	0.7	0.0	0.1	0.2
Philosophy	5.2	0.0	0.4	0.3	0.0	0.0	63.9	0.0	0.7	0.1	1.0
English/Amer Lang & Lit	18.7	0.0	0.1	0.0	0.1	4.4	0.2	64.7	1.6	3.7	11.0
Classical Lang & Lit	1.6	0.0	0.3	0.0	0.0	0.1	0.1	0.4	59.1	0.9	0.7
Modern Lang & Lit	12.7	0.0	0.1	0.3	0.3	0.4	0.2	0.9	3.5	69.2	6.2
"Other Humanities"	7.4	2.6	2.0	2.0	0.8	4.4	3.9	6.9	6.1	5.3	37.9
Nonhumanities	24.9	24.3	30.5	11.3	12.4	29.5	31.4	25.4	25.1	18.4	36.0
No Report	1.0	2.3	0.7	3.1	0.6	0.5	0.1	0.7	0.7	1.1	1.0

*Includes postdoctoral appointees as well as Ph.D.s employed full-time and part-time.
NOTE: Numbers are rounded to the nearest hundred; therefore, subcategories may not add to totals.

between the fields of American history and "other history." Even in these fields, though, movement into nonhumanities fields (24.3 percent and 30.5 percent) exceeded the incidence of exchange between the two history fields (12.0 percent and 8.0 percent).

The highest rates of nonhumanities employment were noted in the fields "other history," speech/theater, philosophy, and "other humanities." To highlight, doctorates in "other history" who worked outside the humanities were concentrated in the field of education and in the social sciences (nearly half of those working in nonhumanities fields), while doctorates in speech/theater were most heavily concentrated in the social sciences (over one-third of the nonhumanities employed). In contrast, philosophy doctorates and doctorates in "other humanities" were distributed across a wider variety of nonhumanities fields. Philosophy doctorates secured employment in the computer sciences, in education, in business management, and in law/jurisprudence (in each of these fields, roughly one-tenth of those working outside the humanities). The aggregated field "other humanities" lost about 2,800 of its degree-holders to the following nonhumanities fields: theology (roughly 17 percent); education (approximately 16 percent); the social sciences (roughly 10 percent); and computer sciences (roughly 10 percent). Because of the relative heterogeneity of degree fields combined to form "other humanities," however, it is useful to reexamine the degree-field breakdown that was provided for this category in Table 1. Holders of degrees in religious studies represent 23.8 percent (or 2,000) of the 8,400 doctorates in "other humanities." In light of that fraction, the movement to theology seems quite reasonable. Similarly, those who earned degrees in linguistics (2,700) and those who earned degrees in American studies (1,800) represent 53.6 percent of doctorates in the "other humanities" classification, making employment in the social sciences less surprising.

For all degree fields combined, education was the single most popular nonhumanities employment field, attracting just under one-quarter of all humanists working outside the humanities classification (see Figure 3). As a field of study, education may be considered distinct from the humanities. As an employment specialty, however, many humanists may consider this field descriptive of their work if only by virtue of their primary activity at work (predominantly teaching) and the sector of the employment market in which they work (predominantly educational institutions).

Employment Sector: Total Graduates

Historically, humanities doctorates have worked in the educational sector. In 1977, 9 out of every 10 full- or part-time workers were employed in this sector. In 1987, however, only 81.0 percent of the 84,200 humanities doctorates working in either full- or part-time jobs were employed by educational institutions (see Table 9). Although educational institutions continue to employ the vast majority of humanists, this majority has been decreasing steadily. As educational employment has declined in proportion, business/industry employment has increased in proportion. In 1977 only 3.2 percent of humanists worked in business/industry; by 1987 this figure had tripled to 9.8 percent.

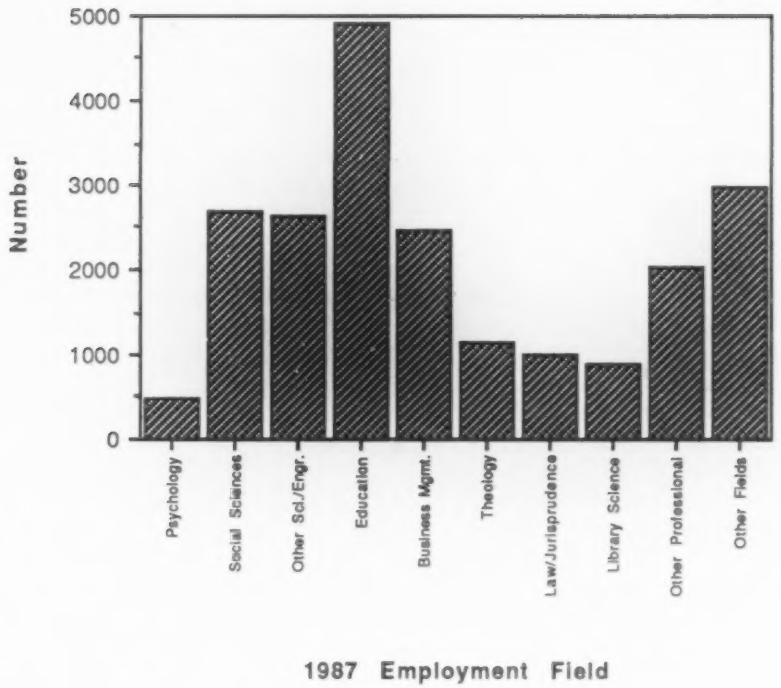

Figure 3. Distribution of humanities Ph.D.s employed in nonhumanities fields in 1987

Table 9: Type of Employer of Humanities Ph.D.s, Time-Series, 1977-1987 (in percent)

Type of Employer	1977	1979	1981	1983	1985	1987
Employed Population* (N)	58,400	63,700	70,400	75,500	81,600	84,200
Educational Institution	89.9	86.3	85.3	82.9	82.3	81.0
4-Year Coll/Univ/Med Sch.	82.4	79.3	77.6	74.8	74.3	73.0
2-Year College	5.1	4.3	4.9	5.1	5.1	4.9
Elem/Secondary Schools	2.4	2.6	2.8	3.0	2.9	3.2
Business/Industry**	3.2	5.4	6.5	8.8	8.7	9.8
U.S. Government	1.7	1.8	2.2	2.1	2.4	2.1
State/Local Government	0.8	1.0	1.6	1.7	1.7	1.1
Nonprofit Organization	3.5	4.5	3.7	4.2	4.6	5.5
No Report	0.7	0.9	0.6	0.3	0.2	0.2

*Includes those employed full-time or part-time.
**Includes those who were self-employed.
NOTE: Percentages for those reporting other types of employers, 0.3 percent of all fields combined, are not included in this table; therefore, totals may not add to 100 percent.

Across fields, the incidence of employment in business/industry in 1987 was higher than average for the fields of English/American languages and literature, music, "other humanities," and philosophy (see Table 10). It should be noted that self-employment is included with business/industry. Among music doctorates, for instance, more than half of those in business/industry were self-employed.

To examine the full range of employer types by discipline, the field of modern languages and literature had the highest incidence of academic employment (85.6 percent). Doctorates in history (both American and "other history" fields) were slightly more likely than those in the remaining fields to be employed by the federal government (4.1 percent and 5.0 percent, respectively); art history doctorates were more likely than others to be working in nonprofit organizations (14.6 percent) and, among those organizations, primarily in museums (a total of 12.0 percent of art historians).

Employment Sector: Recent Graduates

Employers of recent graduates, while still predominantly academic, form an interesting contrast to those of the total 42-year cohort of full- and part-timers (see Table 11). Recent graduates were less likely than the total cohort, on the whole, to be employed in 4-year educational institutions, which include 4-year colleges, universities, and medical schools (67.5 percent compared to 73.0 percent for the total group). Alternatively, they were more likely to be employed in junior colleges or in elementary/secondary schools (for the two sectors combined, 10.3 percent compared with 8.1 percent). One field, English/American languages and literature, stood in slight contrast in that a higher proportion of recent graduates than of total graduates worked in 4-year educational institutions (76.2 percent compared with 73.6 percent).

For combined fields, recent graduates were a bit more likely than the total group to be employed by business/industry (11.3 percent compared to 9.8 percent for the total group) and by nonprofit organizations (6.8 percent compared to 5.5 percent). Exceptions to this observation were also noted, however. Recent graduates in art history, speech/theater, and English/American languages and literature were less likely than their counterparts in the total cohort to work in the business sector. Similarly, recent graduates in American history, philosophy, English/American languages and literature, and classics were employed in the nonprofit sector in smaller fractions than the total cohort in those fields.

Primary Work Activity: Total Graduates

Another factor that characterizes the work of humanities doctorates is the activities to which they devote the most significant portions of their work time. As a decline in the rate of academic employment and a corresponding growth in the rate of business employment is evident for humanities doctorates, one might expect a decline in the proportions who

TABLE 10: Type of Employer of Humanities Ph.D.s (1944-1986 Graduates), by Field of Doctorate, 1987 (in percent)

Type of Employer	All Fields	Field of Doctorate: Amer History	"Other History"	Art History	Music	Speech/ Theater	Phil- osophy	English/ Amer Lang & Lit	Clas- sical Lang & Lit	Modern Lang & Lit	"Other Human- ities"
Employed Population* (N)	84,200	8,200	11,300	2,400	6,700	3,500	6,600	21,800	1,700	14,400	7,600
Educational Institution	81.0	78.5	79.3	74.4	79.1	84.1	82.2	83.1	82.9	85.6	72.8
4-Year Coll/Univ/Med Sch	73.0	69.0	71.9	72.4	70.7	73.9	75.9	73.6	76.0	77.8	66.2
2-Year College	4.9	6.4	5.3	1.3	4.5	7.4	4.2	5.9	0.8	3.3	4.6
Elem/Secondary Schools	3.2	3.0	2.1	0.7	4.0	2.8	2.1	3.6	6.1	4.4	2.0
Business/Industry**	9.8	6.5	7.7	8.5	11.8	9.8	10.9	11.9	9.4	8.4	11.4
U.S. Government	2.1	4.1	5.0	1.1	0.8	0.4	1.8	1.0	0.9	2.1	1.5
State/Local Government	1.1	1.2	0.6	1.1	0.8	1.4	1.0	0.7	1.8	1.2	3.2
Nonprofit Organization	5.5	9.7	7.2	14.6	6.5	4.0	3.8	3.2	4.8	2.4	9.2
No Report	0.2	0.1	0.0	0.3	0.3	0.0	0.2	0.1	0.2	0.1	1.5

*Includes those employed full-time or part-time.
**Includes those who were self-employed.
NOTE: Percentages for those reporting "other" types of employers, 0.3 percent of the total for all fields combined, are not included in this table; therefore, totals may not add to 100 percent.

TABLE 11: Type of Employer of Humanities Ph.D.s (1981-1986 Graduates), by Field of Doctorate, 1987 (in percent)

Type of Employer	All Fields	Field of Doctorate: Amer History	"Other History"	Art History	Music	Speech/ Theater	Phil-osophy	English/ Amer Lang & Lit	Clas-sical Lang & Lit	Modern Lang & Lit	"Other Human-ities"
Employed Population* (N)	16,500	1,200	1,600	600	2,100	700	1,100	3,500	300	2,900	2,500
Educational Institution	77.9	71.6	67.0	72.1	76.0	86.2	78.5	88.3	77.3	81.5	69.6
4-Year Coll/Univ/Med Sch	67.5	61.4	58.0	68.1	62.4	70.6	68.9	76.2	68.8	71.3	62.8
2-Year College	5.4	8.2	4.9	2.5	5.3	8.1	5.7	6.8	0.0	4.6	3.6
Elem/Secondary Schools	4.9	2.0	4.2	1.6	8.2	7.4	3.9	5.2	8.5	5.5	3.2
Business/Industry**	11.3	15.4	12.1	4.2	14.0	7.7	15.4	7.5	21.2	9.9	13.2
U.S. Government	2.4	6.5	7.2	1.7	0.0	0.6	2.1	1.4	0.8	2.6	1.6
State/Local Government	0.9	2.3	0.0	2.2	1.1	0.0	1.6	0.9	0.0	0.4	1.0
Nonprofit Organization	6.8	4.2	11.4	19.8	7.7	5.6	2.4	1.8	0.8	4.6	13.7
No Report	0.1	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.4	0.0

*Includes those employed full-time or part-time.
**Includes those who were self-employed.
NOTE: Percentages for those reporting "other" types of employers are not included in this table; therefore, totals may not add to 100 percent.

report teaching as their primary work activity. The data in Table 12 illustrate that while teaching continues to be the primary work activity of the majority of humanities doctorates (63.9 percent), this activity has indeed declined since 1977 (by 5.6 percentage points) in its prominence among work activities reported. However, the trend in work activity is hardly a smooth one. In 1977, nearly 70 percent of humanists taught as their primary work activity. This figure dropped in 1979 to roughly 66 percent, rose back up to 70 percent in 1981, then dropped back down to 66 percent in 1983. In 1985, a further decline was observed, down to roughly 64 percent, but 1987 marked no real change from 1985. Similar patterns of fluctuation occur for other work activities, as well. Overall, though, there appears to be a downward trend in teaching as the primary work activity of humanities doctorates. Still, as the proportions of humanists who have worked in academe have consistently exceeded the proportions who have been engaged primarily in teaching, this activity does not stand alone in the work that characterizes academic employment.

The 5.6 percentage-point drop in teaching between 1977 and 1987 was met by an increase in management/administration (3.3 percentage points) and in other activities (1.8 percentage points). The activities classified as "other" have varied over the survey series; hence, while it is meaningful to list these activities individually when the 1987 results are the focus of discussion, it is not meaningful in this time-series analysis.

As with the humanities in total, teaching was the most often cited primary work activity among individual disciplines (see Table 13). Yet, there was quite a bit of variation by field. Degree-holders in American history, art history, and "other humanities" fell at the lower end of the spectrum (58.4 percent, 59.0 percent, and 58.2 percent, respectively) while modern languages and literature stood virtually alone at the upper

Table 12: Primary Work Activity of Humanities Ph.D.s, Time-Series, 1977-1987 (in percent)

Primary Work Activity	1977	1979	1981	1983	1985	1987
Employed Population* (N)	58,400	63,700	70,400	75,500	81,600	84,200
Teaching	69.5	65.6	69.8	66.3	63.5	63.9
Management/Administration	10.9	12.9	11.1	11.4	12.9	14.2
Research & Development	5.0	5.2	3.9	4.4	4.9	4.9
Writing/Editing	4.8	5.4	4.2	5.1	5.5	4.9
Performing Arts	0.0	1.1	0.9	0.8	1.0	1.0
Consult/Professional Svcs	2.1	2.3	2.8	3.6	3.8	3.3
Other Activities	3.7	4.0	5.1	5.2	5.0	5.5
No Report**	4.0	3.6	2.2	3.2	3.4	2.3

*Includes those employed full-time or part-time.
**Includes multiple responses.

TABLE 13: Primary Work Activity of Humanities Ph.D.s (1944-1986 Graduates), by Field of Doctorate, 1987 (in percent)

Primary Work Activity	All Fields	Field of Doctorate: Amer History	"Other History"	Art History	Music	Speech/ Theater	Phil- osophy	English/ Amer Lang & Lit	Clas- sical Lang & Lit	Modern Lang & Lit	"Other Human- ities"
Employed Population* (N)	84,200	8,200	11,300	2,400	6,700	3,500	6,600	21,800	1,700	14,400	7,600
Teaching	63.9	58.4	60.7	59.0	63.1	68.9	62.2	65.0	62.4	71.7	58.2
Management/Administration	14.2	16.9	16.7	18.0	13.1	13.9	11.5	16.0	12.8	11.2	10.9
Mgmt of Education Prog.	8.8	10.1	7.8	7.6	9.5	8.7	6.9	11.2	8.8	8.2	4.9
Mgmt of Other Programs	5.4	6.7	8.9	10.4	3.6	5.2	4.5	4.8	4.0	3.0	6.0
Research & Development	4.9	7.9	6.3	6.3	2.7	0.7	8.7	2.5	7.3	3.6	8.2
Writing/Editing	4.9	6.8	3.2	3.6	0.9	3.4	3.8	7.2	4.7	5.4	3.3
Performing Arts	1.0	0.0	0.0	0.0	10.3	4.9	0.0	0.0	0.0	0.1	0.1
Consult/Professional Svcs.	3.3	2.8	3.5	2.3	1.4	2.1	6.1	3.7	4.1	2.0	4.1
Other Activities	5.5	6.1	8.1	7.8	7.6	4.9	5.6	4.1	7.0	4.4	4.5
No Report**	2.3	1.1	1.4	3.0	0.8	1.0	2.2	1.4	1.6	1.6	10.8

*Includes those employed full-time or part-time.
**Includes multiple responses.

end (71.7 percent). For American history and art history, management/administration was a frequently cited activity, with 16.9 percent of American history doctorates and 18.0 percent of art history doctorates citing this activity as primary. Doctorates in these two fields, however, differed somewhat in the kinds of programs they that were likely to manage or administer. Management of educational programs was more prevalent among American history doctorates (10.1 percent) than among art history doctorates (7.6 percent), who were more likely to manage noneducational programs (10.4 percent compared with 6.7 percent of those in American history).

Like doctorates in both American history and art history, doctorates in the remaining humanities fields were most likely to be primarily engaged in management/administration when teaching was not their primary work activity. Like doctorates in American history, management of educational programs was usually more prevalent. However, like the field of art history, "other history" and "other humanities" stood in exception.

A glance at the remaining primary work activities indicates that research and development was higher among doctorates in American history (7.9 percent), philosophy (8.7 percent), classical languages and literature (7.3 percent), and "other humanities" (8.2 percent) than among doctorates in other fields. Similarly, writing/editing was higher in American history (6.8 percent) and English/American languages and literature (7.2 percent) than in other fields. Performing arts was negligible for all fields but music (10.3 percent) and, to a lesser extent, speech/theater (4.9 percent). Then there were those who reported other activities, which in 1987 included information management, computer applications, sales and marketing, and the category "other" that was listed as an option on the 1987 survey instrument. While, in the aggregate, the "other activities" category shown in Table 13 was notable in size for many fields, none of the individual activities noted above was singular in its prevalence within the aggregate.

Finally, it should be mentioned that primary work activity was unknown for nearly 11 percent of the doctorates included in "other humanities." However, a large fraction (nearly 40 percent) of these doctorates held their degrees in linguistics or in archeology. Doctorates in these two fields received an alternative questionnaire that was designed specifically for science, engineering, and social science disciplines. This alternative questionnaire did not contain, in all cases, options for primary work activity that were directly comparable to those on the humanities questionnaire. As such, many of their responses could not be mapped directly back into the humanities primary work activity taxonomy. These individuals were 7.8 percent of the "other humanities" doctorates shown in Table 13 and, hence, accounted for over 70 percent of the item nonresponse illustrated in the table for that field.

Primary Work Activity: Recent Graduates

Despite a slightly lower incidence of employment in educational institutions overall, recent graduates were slightly higher in their incidence of teaching as a primary work activity than was the total cohort as a

whole. As noted, however, teaching as a work activity is not exclusive to academe, and predominantly administrative positions within academe are likely to be occupied by more experienced doctorates. In all fields except American history, philosophy, modern languages and literature, and "other humanities," recent graduates were more likely than the total cohort of which they formed a part to cite teaching as their primary work activity (see Table 14). In modern languages and literature, the rate of teaching was equivalent for recent graduates and total graduates.

In general, management/administration was less prevalent in the recent cohort than in the total cohort, except for art historians and doctorates in "other humanities," where management rates were roughly equivalent for the recent and total groups. To continue the comparison, a higher percentage of recent Ph.D.s than of total Ph.D.s were primarily engaged in research and development (6.2 percent compared to 4.9 percent of the total group); for recent Ph.D.s in both American history and philosophy, the percentages were as high as 16.0 percent and 13.3 percent, respectively. Though not so for philosophy, writing/editing was more prevalent among recent Ph.D.s than among the total group, and this activity was particularly notable among recent doctorates in American history (10.4 percent), English/American languages and literature (9.0 percent), and classical languages and literature (10.4 percent).

Like the total group, a fair proportion of recent doctorates in music (11.5 percent) and speech/theater reported performing arts as their primary work activity. Finally, the category "other activities" characterizes, albeit inadequately, the primary work of a fairly high proportion of recent doctorates. Among recent doctorates in fields where this phenomenon was highest, those in American history (5.8 percent), art history (4.4 percent), philosophy (4.7 percent), and classics (7.7 percent) reported sales and marketing as their primary work activity; recent graduates in "other history" fields (6.7 percent) reported information management as their primary work activity; and recent graduates in music (3.5 percent) reported computer applications as their primary work activity. However, in virtually all of these instances, the numbers associated with the quoted percentage figures were quite small.

Median Annual Salary By Years Since Degree and Gender

Next, we examine the average salaries earned by humanities doctorates. To avoid artificial deflation of these values, the field of focus is narrowed even further to include only full-time workers (excluding postdoctoral appointees) and, among these full-time workers, only those who were employed outside the military. In addition, salaries of academics who were paid for a 9-to-10 month work schedule were adjusted (by a factor of 11/9) to represent a full-time work year.

In February 1987 humanities doctorates earned an average of $38,900, with 50 percent of them earning at or below that salary. By field, doctorates in American history had the highest median annual salary, $43,800, and music doctorates had the lowest, $35,600, a difference of over $8,000. When field differences are examined in light of years since earning the doctorate, salaries of humanists with five or fewer years

TABLE 14: Primary Work Activity of Humanities Ph.D.s (1981-1986 Graduates), by Field of Doctorate, 1987 (in percent)

Primary Work Activity	All Fields	Field of Doctorate: Amer History	"Other History"	Art History	Music	Speech/ Theater	Phil- osophy	English/ Amer Lang & Lit	Clas- sical Lang & Lit	Modern Lang & Lit	"Other Human- ities"
Employed Population* (N)	16,500	1,200	1,600	600	2,100	700	1,100	3,500	300	2,900	2,500
Teaching	65.3	46.8	62.5	60.3	64.6	72.5	60.7	74.9	63.1	71.6	57.6
Management/Administration	8.8	11.1	9.8	18.1	7.9	7.0	6.2	7.0	4.6	7.7	11.3
Mgmt of Education Prog.	3.9	3.3	2.8	5.9	4.8	4.6	2.9	3.6	4.6	4.8	3.5
Mgmt of Other Programs	4.8	7.8	7.0	12.1	3.1	2.4	3.3	3.4	0.0	2.9	7.7
Research & Development	6.2	16.0	6.7	8.6	3.5	1.1	13.3	2.2	4.2	5.3	7.9
Writing/Editing	5.6	10.4	5.1	1.6	0.2	4.4	4.9	9.0	10.4	5.7	4.4
Performing Arts	1.9	0.0	0.0	0.0	11.5	9.1	0.0	0.0	0.0	0.0	0.0
Consult/Professional Svcs.	2.6	4.7	3.1	0.0	1.9	2.7	4.7	1.5	2.3	1.8	4.4
Other Activities	7.6	10.9	9.9	11.5	10.4	3.1	10.3	4.9	11.9	6.3	5.5
No Report**	2.1	0.0	2.9	0.0	0.0	0.0	0.0	0.5	3.5	1.7	9.1

*Includes those employed full-time or part-time.
**Includes multiple responses.

since degree are far less disparate across fields in their median salaries, with values ranging from approximately $28,000 to $29,000 a year. However, as the recency of degrees diminishes, the variation in salaries by field increases (see Table 15).

When variation in salaries by gender is examined, we observe that women generally receive lower median earnings than men, even when years since degree is held constant between the two groups. In fact, there are only three fields in which this pattern was not evident: (1) art history, where women with either 11-15 years or over 30 years since receiving their degrees earned approximately the same as their male counterparts; (2) philosophy, where women in the three newest cohorts earned roughly the same or slightly higher than their male counterparts; and (3) "other humanities," where women in the two newest cohorts and those whose degrees were 16-20 years old earned the same or higher than their male counterparts.

However, salaries may vary as a function of factors other than simply degree field and years since degree. Employment sector, primary work activity, years of professional work experience, and field of employment, taken singly or in conjunction, not only add to our understanding of the market forces that establish salary levels, but also may help to explain gender differences in salaries. While an in-depth study of each of these factors would exceed the scope of this report, an analysis of average compensation across the major employers of humanities doctorates is in order.

Median Annual Salary by Employment Sector and Gender

Table 16 provides salary data by field of degree, gender, and type of employer for five major employment sectors: 4-year educational institutions, 2-year colleges, elementary/secondary schools, business/industry, and government. Among these sectors, full-time workers in 2-year colleges earned the highest median salary, $40,000. However, except for the primary and secondary schools, which paid $33,200 on average, the other sectors were close behind the 2-year college sector.

Though sectoral differences in salaries were hardly evident for the population as a whole, differences were evident between men and women once again. Women generally earned less money on average than men. One notable exception was found in the "other humanities" category. The women in this degree category who were working in business/industry earned $57,500 on average, while their male counterparts earned $38,800. No other degree field/employment sector combination produced a higher median salary for either men or women. The rather large discrepancy in this case between gender groups may be related to differences in degree specialty. Nevertheless, as for all salary differentials, a host of factors are likely to play a role in determining compensation.

To analyze the growth in median salaries of humanities doctorates, we compare the salaries observed in February 1987 with those observed in February 1985. First, to add some context to the growth in these salaries, we note the rate of increase in the Consumer Price Index (CPI) between these two points in time at 4.8 percentage points, the rate of

TABLE 15: Median Annual Salaries of Full-Time Employed Humanities Ph.D.s, by Gender, Years Since Ph.D., and Field of Doctorate, 1987 (in thousands of dollars)

Gender and Years Since Ph.D.	All Fields	Field of Doctorate									
		Amer History	"Other History"	Art History	Music	Speech/ Theater	Phil- osophy	English/ Amer Lang & Lit	Clas- sical Lang & Lit	Modern Lang & Lit	"Other Human- ities"
Total	$38.9	$43.8	$40.8	$36.8	$35.6	$39.7	$40.4	$37.4	$36.8	$37.0	$36.1
5 or Less	28.6	28.3	29.3	29.2	27.9	29.4	28.3	28.3	28.2	28.7	28.7
6-10	33.6	36.0	35.1	35.4	33.3	36.2	33.6	32.8	32.4	32.0	35.0
11-15	38.6	43.2	39.7	39.2	39.1	37.5	39.5	37.4	36.2	36.9	38.3
16-20	43.7	45.6	45.5	46.5	46.1	42.9	42.5	43.3	39.4	41.3	46.7
21-30	49.3	55.8	53.0	50.6	44.2	48.2	51.7	44.5	48.7	51.1	53.5
Over 30	55.8						58.1	52.2	41.8	52.8	
Male, Total	$40.2	$45.4	$42.0	$39.5	$36.5	$41.6	$41.0	$39.9	$38.6	$39.8	$37.2
5 or Less	29.1	28.2	29.6	30.5	29.3	29.7	28.2	29.2	30.1	29.2	28.7
6-10	33.4	36.2	35.0	36.7	33.3	39.3	33.5	31.8	32.8	31.9	33.7
11-15	39.4	45.0	39.8	39.5	39.4	37.5	39.4	39.1	36.4	37.9	39.0
16-20	44.1	45.3	45.4	46.9	48.1	42.9	42.8	43.7	39.7	41.6	46.1
21-30	50.3	55.6	53.1	50.9	44.6	48.3	51.9	44.9	49.8	51.7	56.1
Over 30	56.8										
Female, Total	$34.9	$36.6	$36.6	$34.6	$31.2	$34.3	$35.5	$34.8	$33.8	$34.7	$34.8
5 or Less	27.9		28.8	27.1	26.9	28.0	29.4	26.9		28.2	28.9
6-10	34.1	34.1	35.6	33.2	33.6	30.5	34.1	34.0	31.7	33.2	35.4
11-15	36.3	35.7	37.3	39.1	36.5	37.2	40.2	36.1	35.4	35.6	37.5
16-20	42.6		46.5		37.8		40.3	42.5		40.4	48.0
21-30	45.0		45.9	50.4	39.2		40.9	42.8		44.5	47.8
Over 30	44.6										

NOTE: Median salaries were computed only for Ph.D.s employed full-time, excluding those in the U.S. military. Academic salaries were multiplied by 11/9 to adjust for a full-time scale. Medians were not provided for cells with less than 20 cases reporting salary.

TABLE 16: Median Annual Salaries of Full-Time Employed Humanities Ph.D.s, by Gender, Type of Employer, and Field of Doctorate, 1987
(in thousands of dollars)

Gender and Type of Employer	All Fields	Field of Doctorate: Amer History	"Other History"	Art History	Music	Speech/ Theater	Phil-osophy	English/ Amer Lang &Lit	Clas-sical Lang & Lit	Modern Lang & Lit	"Other Human-ities"
Total	$38.9	$43.8	$40.8	$36.8	$35.6	$39.7	$40.4	$37.4	$36.8	$37.0	$36.1
Educational Institution	39.2	45.2	41.3	37.3	36.4	39.9	40.2	37.6	37.8	37.1	36.2
4-Yr Coll/Univ/Med Sch	39.2	45.6	41.6	37.4	36.6	40.0	40.2	38.2	37.9	37.0	36.0
2-Year College	40.4	42.4	42.4		46.3	39.4	41.0	36.9		42.4	42.7
Elem/Secondary Schools	33.2				30.8			33.9	33.2	34.8	
Business/Industry*	39.2	41.5	40.2	25.5	30.7	45.0	50.2	40.0	36.3	37.5	40.8
Government	38.7	42.7	42.1				50.1	39.4		38.3	35.7
Male, Total	$40.2	$45.4	$42.0	$39.5	$36.5	$41.6	$41.0	$39.9	$38.6	$39.8	$37.2
Educational Institution	40.5	46.0	42.3	40.6	37.7	41.4	40.7	40.1	39.3	40.0	38.5
4-Yr Coll/Univ/Med Sch	40.6	46.2	42.5	40.8	37.9	41.7	40.8	40.3	39.3	39.9	37.9
2-Year College	41.3							36.7			
Elem/Secondary Schools	34.9							35.6		38.0	
Business/Industry*	39.7				31.0		50.1	40.3		38.0	38.8
Government	40.2									40.8	
Female, Total	$34.9	$36.6	$36.6	$34.6	$31.2	$34.3	$35.5	$34.8	$33.8	$34.7	$34.8
Educational Institution	34.7	36.9	35.5	35.0	32.4	35.4	34.8	34.7	33.8	34.6	33.1
4-Yr Coll/Univ/Med Sch	34.7	36.6	35.0	34.9	32.7	35.0	34.9	34.8	34.7	34.5	33.5
2-Year College	39.3							37.4		42.1	
Elem/Secondary Schools	30.5							33.0		27.9	
Business/Industry*	38.1		40.3				50.8	34.6		36.0	57.5
Government	35.9										30.5

*Includes those who were self-employed.
NOTE: Median salaries were computed only for Ph.D.s employed full-time, excluding those in the U.S. military. Academic salaries were multiplied by 11/9 to adjust for a full-time scale. Medians were not provided for cells with less than 20 cases reporting salary.

increase in median salaries of U.S. doctoral scientists at 12.5 percent, and that for U.S. doctoral engineers at 10.9 percent.[9]

In the time frame noted, median annual salaries of humanists in each of the five major sectors grew well beyond the increase in the CPI and, in certain sectors, beyond the increases in median salaries of doctoral scientists and engineers. Salaries of humanists employed in business/industry grew by 27.3 percent (from $30,800 to $39,200); salaries of those working in 2-year colleges and in government grew by 15.4 percent (from $35,000 to $40,400) and 15.5 percent (from $33,500 to $38,700), respectively; salaries of those working in 4-year colleges/universities/medical schools grew by 11.7 percent (from $35,100 to $39,200); and salaries of those working in elementary/secondary schools grew by 10.7 percent (from $30,000 to $33,200).

By field, growth in median salaries was most notable in American history, 17.4 percent. American history was followed by "other humanities" (14.6 percent), classics (12.9 percent), "other history" (12.1 percent), philosophy (11.9 percent), speech/theater (11.5 percent), art history (10.5 percent), modern languages and literature (10.1 percent), music (9.9 percent), and, finally, English/American languages and literature (9.7 percent).

Academic Employment

As noted earlier, over 80 percent of humanities doctorates were employed in the academic setting in 1987. As academic life typifies the humanities doctorate, select characteristics of academic employment are described below. Moreover, estimates shown are expanded to include part-time workers and postdoctoral appointees, as well as full-time workers.

Despite the drop since 1977 in the share of humanists working in colleges and universities (shown in Table 9), the number who were so employed grew from approximately 51,500 to 66,100, a growth of 28 percent (see Figure 4).[10] The corresponding growth among academic ranks, however, was disproportionate to the 28 percent noted for college/university employment as a whole. First, full professorships grew by roughly 50 percent during that period (from approximately 18,200 to 27,200).

Second, though the number of associate professorships also grew, the increase was modest by comparison--only 19 percent (from approximately 15,200 to 18,100). However, it should be noted that while there were more associate professors in 1987 than in 1977, the 1987 figure represented a drop from that of 1985, suggesting that promotions to the rank of full professor exceeded the number of relacements within the associate rank during that 2-year period.

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[9]CPI-W data was provided by the Bureau of Labor Statistics, U.S. Department of Labor. Salary data on U.S. doctoral scientists and engineers are derived through the SDR project.

[10]Unlike Table 9, which excluded postdoctoral appointees, the data discussed in this section include them; despite this difference, the downward trend in the rate of academic employment holds in both instances.

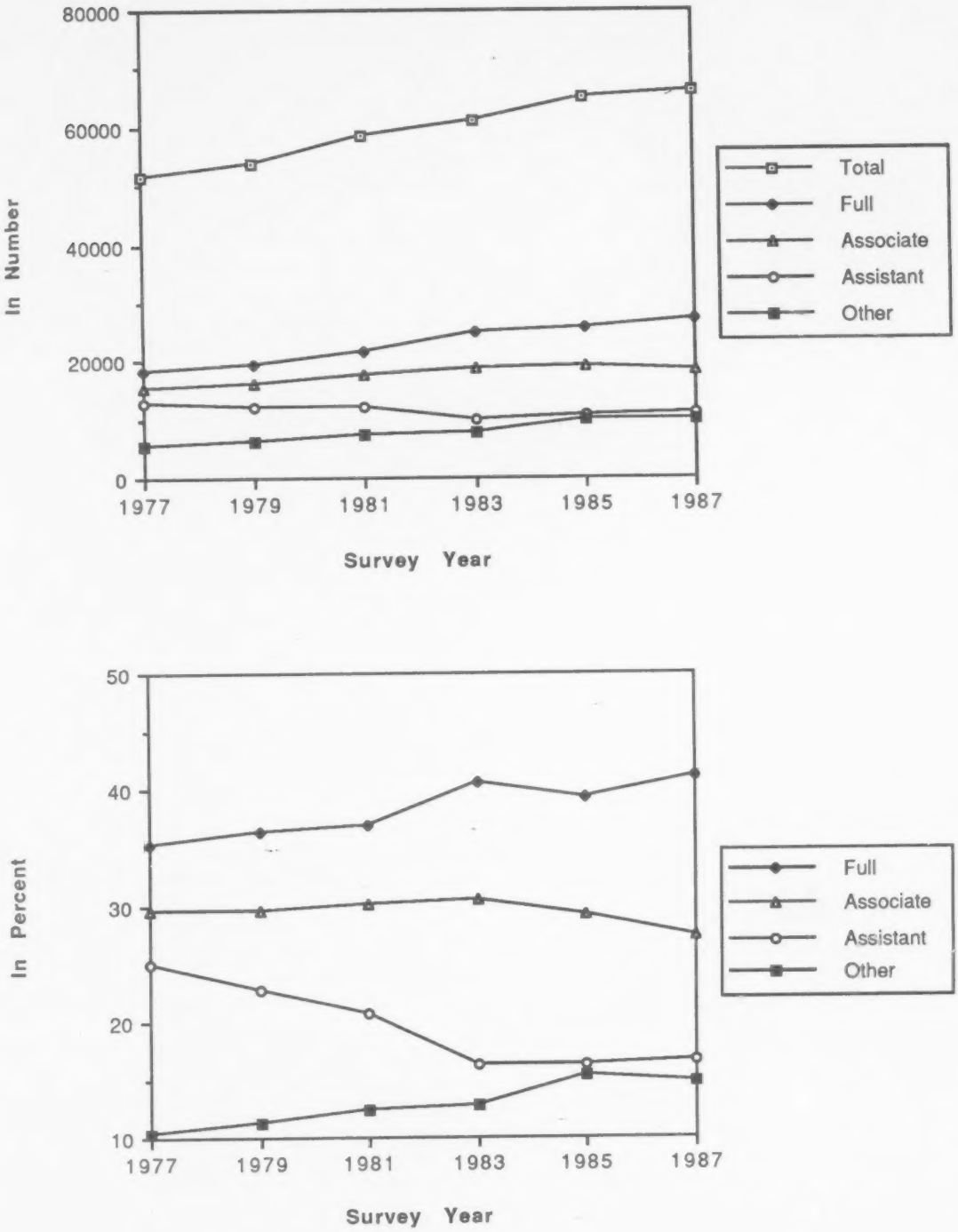

Figure 4. Academic position of humanities Ph.D.s, time-series, 1977-1987

Third, unlike positions in the full and associate ranks, positions in the assistant professorial rank declined in number, by 14 percent (from approximately 12,800 to 11,000), again suggesting that promotions from the rank exceeded replacements within the rank. The decline in the assistant professoriate was only evident through 1983, however, when 9,900 humanists were estimated to hold this rank. Since then, the number has risen slightly but still continues to register below that for 1977.

Finally, the number of positions falling outside the professorial ranks--labeled in Figure 4 as "other"--grew in number by roughly 85 percent (from 5,300 to 9,800). The number of positions in this category climbed steadily from 1977 to 1985 and then appreared to stablize.

The picture that forms, then, is that the number of humanists employed in academe is growing but, given the decline in the rate of academic employment, this numerical growth is not in pace with that for the humanities labor force in total. Moreover, as shown in Figure 4 the composition of the professoriate has changed somewhat: full professors were a greater share of the total who were academically employed in 1987 than they were in 1977 (41 percent compared with 35 percent); despite their increase in number, associate professors were a smaller share of that total (27 percent compared with 30 percent, respectively); assistant professors were a notably smaller share of that total (17 percent compared with 25 percent, respectively); and other academic positions were a greater share of that total (15 percent compared with 10 percent).

Because questionnaire response options for nonranking academic positions have changed over the survey series, meaningful time-series comparisons for positions subsumed under the category "other" are precluded. For instance, administrative and nonfaculty positions, per se, were not listed explicitly on the 1987 questionnaire though they were on some of the questionnaires prior to 1987. However, an option for adjunct faculty was included in 1987. While the rates of employment in adjunct positions cannot be compared to earlier years, additional information was requested of adjunct faculty in 1987 from which a general description of this group may be constructed, at least for that point in time.

Of the approximately 2,000 individuals in adjunct positions in 1987, a majority (52.0 percent) held this status for less than 5 years (52.0 percent), with a single year being the most common (20.7 percent). Moreover, a majority of adjunct faculty (67.3 percent) taught at only one institution. Further, the median number of courses taught per year by adjunct faculty was 4, with 50 percent of these individuals teaching 4 or fewer courses, on average--though four was modal. Interestingly, the median payment per course was only $1,500. Finally, only about 35 percent of adjunct faculty taught on an annual contract, and approximately 87 percent reported that they would not have the opportunity to transfer from adjunct to regular status, if desired.

The prevalence of the adjunct status within broad categories of humanities fields in 1987 is shown in Table 17. These broad categories are English/American languages and literature; other languages and literature, which combines classics with modern languages and literature; history, which folds American history back into the other history fields; and other humanities, which in addition to fields enumerated earlier in this report, now subsumes art history, music, speech/theater, and

TABLE 17: Academically Employed Humanities Doctorates, by Academic Position, Field of Doctorate, and Gender, 1987 (in percent)

Year of Ph.D. and Academic Position	All Fields		Field of Doctorate							
			Eng/Amer Lang and Lit		History		Other Lang and Lit		Other Humanities	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Total, 1944-1986 Ph.D.s (N)	46,700	19,400	11,300	6,200	12,500	2,400	7,800	5,300	15,100	5,500
Faculty	90.5	80.2	91.1	78.2	87.8	80.5	92.6	80.9	91.2	81.8
Professor	48.3	23.9	52.1	27.1	54.7	29.8	41.5	21.0	43.6	20.4
Associate Professor	27.7	26.7	26.2	25.9	21.9	23.7	32.8	29.3	31.1	26.5
Assistant Professor	12.9	25.4	11.1	19.4	9.5	22.9	16.9	27.2	15.0	31.8
Instructor	1.6	4.2	1.6	5.8	1.8	4.0	1.3	3.4	1.5	3.2
Lecturer	1.1	5.1	1.2	7.7	0.7	2.8	2.1	5.2	0.9	3.1
Adjunct	2.1	5.4	1.3	4.9	3.5	6.9	1.6	4.3	1.8	6.3
Other Faculty	2.7	3.5	2.8	2.8	4.3	3.2	1.5	3.9	1.8	4.2
Does Not Apply	2.4	3.3	2.6	3.8	2.8	4.3	1.3	3.0	2.5	2.7
Postdoctoral Appointment	0.6	1.4	0.6	1.7	0.4	1.7	0.5	1.5	0.7	0.7
No Report	0.7	1.0	0.4	0.8	0.5	0.6	0.5	1.2	1.1	1.1
Total, 1981-1986 Ph.D.s (N)	6,800	5,600	1,400	1,600	1,300	600	1,100	1,300	2,900	2,100
Faculty	79.5	70.9	74.2	59.0	79.0	72.7	84.2	73.1	80.4	78.0
Professor	5.9	3.4	4.5	5.3	12.1	2.9	2.8	2.2	5.1	2.8
Associate Professor	15.2	8.8	11.8	5.5	5.0	10.7	12.1	6.9	22.8	11.8
Assistant Professor	54.2	52.1	53.5	36.8	53.6	52.6	66.1	59.4	50.2	59.1
Instructor	4.1	6.6	4.5	11.5	8.4	6.5	3.2	4.6	2.4	4.3
Lecturer	4.0	8.4	7.3	16.1	2.1	4.7	5.0	7.4	2.9	4.3
Adjunct	2.9	9.0	4.1	10.7	0.6	8.9	0.5	8.4	4.2	8.0
Other Faculty	4.8	3.7	6.2	5.1	8.4	0.2	6.6	2.9	1.7	4.2
Does Not Apply	4.7	3.8	3.6	5.3	5.8	5.0	1.9	2.4	5.9	3.1
Postdoctoral Appointment	2.7	2.8	4.3	3.8	2.3	6.2	1.7	3.3	2.5	0.7
No Report	1.4	1.5	0.2	0.0	1.8	2.3	0.0	2.4	2.3	1.7

NOTE: Other Languages & Literature = Classical Languages and Modern Languages and Literature. Other Humanities = Art History, Music, Speech/Theater, Philosophy, and "Other Humanities."

philosophy. Also shown in the table are percentages of men and women in the full range of other academic positions.

In all fields combined, women were more likely than the men to work in the adjunct status (5.4 percent compared with 2.1 of men). Moreover, in actual number, there was roughly a 50-50 split between gender groups. This is noteworthy as women constitute only 29 percent of humanists employed in the academic sector. Women were more likely to hold adjunct positions in all four humanities categories, as well. Among those four categories, history ranked highest in the proportion with the adjunct status--this was also true for men (6.9 percent of women and 3.5 percent of men).

When other academic positions are examined, a fairly clear pattern emerges in comparisons of women and men. In the total cohort, across all four categories, women were far less likely to hold full professorships, slightly less likely to have obtained the associate professor rank, and more likely to be in lower-ranking positions.

Differential trends in year of degree for men and women may influence this pattern to some extent. Yet, when comparisons on academic position are made between men and women who are recent graduates, the tendency for women to hold lower-ranking positions, though not as pervasive as that for the total cohort, is still quite evident. Despite similarity in rates of full professorships between men and women in the fields of English and American languages and literature and "other languages and literature," women were somewhat underrepresented in the associate and assistant professor ranks. Conversely, women were more likely to be instructors or lecturers or to hold the adjunct status. In history, a different pattern was observed: compared to their male counterparts, women were less likely to be full professors, more likely to be associate professors, about as likely to be assistant professors, and more likely to be in the adjunct status. Finally, in the category "other humanities," women were less likely than men to hold either full or associate professorships, but more likely to be in the lower-ranking positions or in the adjunct status.

When tenure status is examined, smaller proportions of women than men were in tenured slots (see Table 18). This is not surprising given the relationship between tenure status and academic rank. Tenure data, disaggregated by broad age grouping, indicates that among Ph.D.s who are 46 or older, women in all four fields are less likely than men to hold tenured positions. In contrast, among the youngest Ph.D.s--those who are age 35 or younger--field differences occur. In the categories "other languages and literature" and "other humanities," women were less likely to be tenured. Furthermore, among nontenured doctorates in these fields, women were less likely to be in the tenure track. For example, in "other languages and literature," roughly seven-tenths of nontenured men but only five-tenths of nontenured women were in the tenure track. Yet, in the remaining fields--English/American languages and literature and history--differences in tenure rates were not evident. In terms of tenure-track slots, men in the English/American category were more likely than their female counterparts to be in the tenure-track (approximately seven-tenths of men compared to six-tenths of women), while the reverse was true for history (nearly eight-tenths of women compared to five-tenths of men).

TABLE 18: Tenure Status of Academically Employed Humanities Ph.D.s, by Field of Doctorate, Age, and Gender, 1987 (in percent)

Age and Tenure	All Fields		Field of Doctorate							
			Eng/Amer Lang and Lit		History		Other Lang and Lit		Other Humanities	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Total Employed (N)	46,700	19,400	11,300	6,200	12,500	2,400	7,800	5,300	15,100	5,500
Tenured	73.6	49.1	75.4	52.2	73.2	50.6	74.3	48.3	72.2	45.6
Not Tenured	23.8	46.9	22.3	43.8	24.8	47.5	22.3	47.7	24.9	49.5
Tenure Track	10.3	18.6	10.6	14.2	7.2	19.0	11.9	20.8	11.8	21.5
Non-Tenure Track	4.4	13.6	1.8	13.3	5.2	11.0	4.6	13.5	5.4	15.2
Tenure Not Applicable	9.2	14.7	9.9	16.4	12.4	17.5	5.8	13.5	7.6	12.8
No Report	2.6	4.0	2.3	4.0	2.0	2.0	3.5	4.0	2.9	4.9
Age 35 and Under (N)	2,400	2,000	600	600	400	200	400	500	1,000	700
Tenured	12.1	5.0	5.4	6.2	1.3	0.0	13.7	4.6	19.5	5.8
Not Tenured	84.5	91.2	94.6	88.7	92.7	99.1	86.3	88.9	74.8	92.5
Tenure Track	57.1	55.7	69.5	56.7	48.8	76.6	62.5	48.2	50.6	53.5
Non-Tenure Track	17.2	22.1	15.6	14.3	29.4	0.0	20.5	28.2	12.4	32.1
Tenure Not Applicable	10.3	13.3	9.6	17.7	14.4	22.5	3.3	12.5	11.8	6.9
No Report	3.4	3.9	0.0	5.2	6.0	0.9	0.0	6.5	5.7	1.8
Age 36 to 45 (N)	14,900	7,900	3,700	2,100	3,400	900	2,500	2,300	5,300	2,500
Tenured	59.9	42.0	68.4	46.2	48.5	42.6	63.2	39.9	59.8	40.2
Not Tenured	37.0	54.0	27.1	50.4	49.2	55.9	34.9	56.2	37.2	54.4
Tenure Track	18.7	23.9	17.9	17.0	17.5	23.6	21.4	29.6	18.6	24.8
Non-Tenure Track	8.2	16.5	2.5	17.1	13.1	19.0	8.1	14.7	9.1	16.6
Tenure Not Applicable	10.1	13.6	6.7	16.3	18.5	13.2	5.4	12.0	9.4	13.1
No Report	3.1	3.9	4.5	3.4	2.3	1.5	1.9	3.9	3.1	5.4
Age 46 and Older (N)	29,200	9,500	6,900	3,500	8,700	1,300	4,900	2,500	8,600	2,200
Tenured	85.8	64.4	85.2	63.8	86.0	65.0	84.9	64.9	86.5	64.3
Not Tenured	11.9	31.6	13.5	32.0	12.3	32.5	10.5	31.5	11.0	30.7
Tenure Track	2.1	6.3	1.5	5.0	1.3	5.7	3.0	7.1	2.9	7.9
Non-Tenure Track	1.3	9.3	0.2	10.8	1.1	6.9	1.5	9.2	2.3	8.6
Tenure Not Applicable	8.5	16.0	11.8	16.2	9.9	19.9	6.0	15.2	5.9	14.2
No Report	2.3	4.0	1.3	4.2	1.7	2.5	4.5	3.6	2.5	5.0

NOTE: Other Languages & Literature = Classical Languages and Modern Languages and Literature. Other Humanities = Art History, Music, Speech/Theater, Philosophy, and "Other Humanities."

EMPLOYMENT DYNAMICS

Employment Status

The objective of this report has been, thus far, to profile humanities doctorates residing in the United States in February 1987. Time-series data were provided both as a context for interpreting and evaluating the status of humanities scholars at present and as a foundation from which to make projections about this population of scholars as a whole. However, discrete snapshots afforded by such data, though informative in their own right, provide limited insight into the dynamics of the humanities labor market.

To cite one example, while time-series data may indicate a decline in the rate of academic employment and a corresponding rise in the rate of business employment, they do not indicate conclusively that humanists are leaving academe for opportunities in business or the extent to which sectoral changes are made in general. To cite another example, time-series data on retirement rates shed little light on those who retire: do retirees come disproportionately from the full-time work force, or is the humanities scholar more likely to leave the work force gradually--working part-time before retiring? Further, what proportion of retirees, if any, return to the work force once they have indicated retirement? Though these are complex phenomena unlikely to be elucidated definitively in a report of this nature, this section will focus on changes made by individuals, rather than simply changes in the population, in three critical areas of employment: employment status, type of employer, and primary work activity.

Using responses provided by humanities doctorates to pairs of consecutive surveys in the SDR series, we will examine rates of change and continuity in these three critical areas. So that patterns may be examined, change and continuity rates will be provided for three time periods: those from 1977-to-1979, those from 1981-to-1983, those from 1985-to-1987. To elaborate, information provided by respondents to both the 1977 and the 1979 surveys will be crosstabulated. Similarly, information provided by respondents to both the 1981 and 1983 surveys and by respondents to both the 1985 and 1987 surveys also will be crosstabulated. Finally, consistent with the data presented earlier on employer and primary work activity, longitudinal data on these two characteristics will include individuals who were employed either full- or part-time in the earlier years; their status in the follow-up year will be tracked.

Table 19 provides longitudinal data on employment status and illustrates the extent to which humanities doctorates changed their status between each survey. Clearly, the large majority (over 90 percent) of

Table 19: Rates of Changes and Continuity in Employment Status of Humanities Doctorates, Longitudinal Data from 1977 to 1979, 1981 to 1983, and 1985 to 1987 (in percent)*

Full-Time in Time 1

Status In Time 2	1977-1979	1981-1983	1985-1987
Full-Time	93.1	92.8	94.1
Part-Time	3.1	2.4	2.5
Postdoctoral Appointment	0.4	1.1	0.5
Unemployed	0.5	0.5	0.4
Not Employed	0.8	0.4	0.2
Retired	1.5	1.3	2.0
Other	0.2	0.6	0.1
No Report	0.3	1.0	0.1

Part-Time in Time 1

Status In Time 2	1977-1979	1981-1983	1985-1987
Full-Time	29.0	34.0	26.6
Part-Time	52.5	48.5	58.2
Postdoctoral Appointment	0.5	0.7	0.9
Unemployed	5.0	5.4	2.3
Not Employed	3.1	3.4	1.8
Retired	8.0	6.7	10.0
Other	0.3	1.2	0.2
No Report	1.5	0.1	0.1

Postdoctoral Appointment in Time 1

Status In Time 2	1977-1979	1981-1983	1985-1987
Full-Time	89.9	61.2	82.7
Part-Time	5.4	13.3	11.7
Postdoctoral Appointment	3.1	11.5	2.3
Unemployed	0.8	1.6	
Not Employed		2.4	2.3
Retired		0.4	1.1
Other	0.8		
No Report		9.7	

Unemployed/Seeking in Time 1

Status In Time 2	1977-1979	1981-1983	1985-1987
Full-Time	35.3	40.7	33.8
Part-Time	18.7	26.2	26.2
Postdoctoral Appointment		0.7	0.3
Unemployed	32.3	19.9	17.1
Not Employed	7.6	11.5	13.9
Retired	2.8	0.7	1.8
Other	2.8	0.3	6.9
No Report	0.5		

Not Employed/Not Seeking in Time 1

Status In Time 2	1977-1979	1981-1983	1985-1987
Full-Time	11.9	16.4	27.0
Part-Time	18.3	15.7	10.1
Postdoctoral Appointment	2.8		3.8
Unemployed	1.4	3.9	7.2
Not Employed	55.0	54.2	43.9
Retired	9.8	8.7	7.3
Other	0.7	0.9	0.6
No Report	0.2		

Retired in Time 1

Status In Time 2	1977-1979	1981-1983	1985-1987
Full-Time	0.3	0.2	1.2
Part-Time	2.5	4.6	2.5
Postdoctoral Appointment			
Unemployed	0.8		0.1
Not Employed	2.1	3.0	1.8
Retired	93.9	91.4	94.2
Other	0.3	0.4	0.2
No Report	0.3	0.5	

*These data are based on responses to two consecutive surveys. As individuals who fail to satisfy this criterion are eliminated from this analysis, meaningful estimates of population size cannot be drawn.

full-timers and retirees maintained their status from the early year to the follow-up year. Of retirees, a small percentage--between roughly 3 and 5 percent--does return to the full- or part-time work force, if only temporarily.

In contrast with full-time employment and retirement, status within the remaining categories appears more transitory. First, only about half of the part-timers continue in the part-time status. A fairly large proportion (between one-fourth and one-third) move into full-time jobs, while small fractions either retire (6-10 percent), become unemployed (roughly 2-5 percent), or stop working (2-3 percent), if only temporarily.

Second, the pattern for postdoctoral appointees, though much less stable, suggests that the vast majority of those holding postdoctoral appointments go on to full-time jobs.

Third, of those who were unemployed but seeking employment in the earlier year, at least one-third had secured full-time jobs by the follow-up year, and between 18 and 26 percent had moved into part-time slots. A fraction--one that is apparently declining--were still seeking employment two years later. Of those who were seeking employment in 1977, approximately one-third were also seeking employment in 1979. The corresponding fraction for 1981-to-1983 seekers was 20 percent and that for 1985-to-1987 seekers was 17 percent. Interestingly, the proportion who changed their employment seeking status from "seeking" to "not seeking" had risen slightly over this period (from 7.6 percent to 13.9 percent).

Finally, of those who were not employed and not seeking employment in the earlier years, about half had maintained that status to the follow-up years. Alternatively, a moderate though growing proportion had moved into full-time positions (from 11.9 percent in 1979 to 27.0 percent in 1987); a notable but declining proportion had taken part-time jobs (beginning with 18.3 percent in 1979 and ending at 10.1 percent in 1987); and a small and somewhat stable fraction (ranging from 9.8 percent in 1979 down to 7.3 percent in 1987) had retired by the follow-up year.

Employment Sector

Interestingly enough, given the declining proportion of humanities doctorates who work in the academic sector, in the three 2-year periods under study, outflow of full- and part-time workers from 4-year educational institutions to other types of employer (see Table 20) was proportionally modest. Between 91 and 94 percent of doctorates working in this sector in the earlier years were similarly employed in the follow-up years. In fact, the only noteworthy efflux from this sector was among humanists who left the work force altogether (roughly 4 percent, on average).

Those employed in 2-year colleges, on the other hand, displayed greater sectoral mobility than their 4-year college counterparts, with roughly 10 percent, on average, moving into positions in 4-year colleges. However, this fraction, coupled with fractions who remained in 2-year colleges (80-85 percent), represents a fairly high rate of retention within the educational setting.

Table 20: Rates of Changes and Continuity in Type of Employer of Humanities Doctorates, Longitudinal Data from 1977 to 1979, 1981 to 1983, and 1985 to 1987 (in percent)*

Educational Institution in Time 1**

Employer In Time 2	1977-1979	1981-1983	1985-1987
Educational Institution	92.8	91.9	93.6
4-Year Coll/Univ/Med. Sch.	86.4	84.1	85.3
2-Year College	3.8	5.0	5.4
Elem/Secondary Schools	2.6	2.8	2.8
Business/Industry	0.9	1.3	1.0
U.S. Government	0.1	0.2	0.1
State/Local Government	0.2		0.2
Hosp/Clinic		0.1	0.1
Other Nonprofit	0.9	0.6	0.8
No Report	0.6	0.3	0.1
Postdoctoral Appointment	0.5	1.2	0.5
Employed	4.0	4.3	3.7

4-year Coll/Univ in Time 1**

Employer In Time 2	1977-1979	1981-1983	1985-1987
Educational Institution	92.9	92.1	93.8
4-Year Coll/Univ/Med.Sch.	92.5	91.3	93.4
2-Year College	0.2	0.5	0.3
Elem/Secondary Schools	0.2	0.3	0.1
Business/Industry	0.6	1.2	1.0
U.S. Government	0.1	0.2	0.1
State/Local Government	0.2		0.1
Hosp/Clinic			
Other nonprofit	1.0	0.6	0.8
No Report	0.5	0.2	0.1
Postdoctoral Appointment	0.5	1.2	0.4
Employed	4.2	4.3	3.7

2-year Coll/Univ in Time 1**

Employer In Time 2	1977-1979	1981-1983	1985-1987
Educational Institution	91.4	90.6	95.2
4-Year Coll/Univ/Med. Sch.	10.7	9.1	9.5
2-Year College	80.6	81.1	85.1
Elem/Secondary Schools	0.1	0.4	0.5
Business/Industry	4.8	2.7	0.2
U.S. Government			
State/Local Government	0.9		
Hosp/Clinic	0.1		0.6
Other Nonprofit	0.5		0.4
No Report	0.1	0.8	
Postdoctoral Appointment			0.3
Not Employed	2.2	6.0	3.6

Elem/Sec School in Time 1**

Employer In Time 2	1977-1979	1981-1983	1985-1987
Educational Institution	90.3	88.6	85.0
4-Year Coll/Univ/Med.Sch.	6.4	4.5	3.3
2-Year College		0.9	0.3
Elem/Secondary Schools	83.9	83.2	81.4
Business/Industry	2.6	2.8	3.4
U.S. Government	2.7		
State/Local Government		0.1	4.1
Hosp/Clinic		3.1	
Other nonprofit	0.3	1.1	0.7
No Report	3.5		0.1
Postdoctoral Appointment		1.4	2.5
Not Employed	0.5	2.8	4.2

Business/Industry in Time 1**

Employer In Time 2	1977-1979	1981-1983	1985-1987
Educational Institution	6.6	6.6	7.0
4-Year Coll/Univ/Med. Sch.	4.7	5.7	4.4
2-Year College	0.5		1.2
Elem/Secondary Schools	1.4	0.9	1.3
Business/Industry	81.6	83.2	81.4
U.S. Government		1.8	0.6
State/Local Government		0.5	0.7
Hosp/Clinic			0.5
Other Nonprofit	2.5	2.7	2.7
No Report		0.2	1.5
Postdoctoral Appointment	0.3	0.5	1.1
Not Employed	9.0	4.5	4.5

Federal Government in Time 1**

Employer In Time 2	1977-1979	1981-1983	1985-1987
Educational Institution	12.6	2.6	4.1
4-Year Coll/Univ/Med.Sch.	12.6	2.6	4.1
2-Year College			
Elem/Secondary Schools			
Business/Industry		5.1	2.7
U.S. Government	74.6	86.6	80.7
State/Local Government		0.2	
Hosp/Clinic			2.6
Other nonprofit	2.9	0.3	6.4
No Report			
Postdoctoral Appointment			
Not Employed	9.9	5.2	3.6

*These data are based on responses to two consecutive surveys. As individuals who fail to satisfy this criterion are eliminated from this analysis, meaningful estimates of population size cannot be drawn.

**Based on individuals who were in the full- or part-time work force in Time 1.

The business sector, which has been drawing increasing numbers (as well as an increasing proportion) of humanities doctorates, retained roughly 80 percent of its employees. A small fraction had either moved into 4-year colleges (around 5 percent in each period) or left the labor force completely (9 percent from the 1977 population and nearly 5 percent from the 1981 and 1985 populations).

A similar pattern is displayed for the federal employees: a small fraction moved into 4-year colleges; another small group moved into non-profit organizations; and another fraction left the labor force altogether.

Primary Work Activity

In the area of primary work activity, the rates of continuity from the early years to their follow-ups may be rank-ordered among the four activities illustrated: teaching had the highest rate of continuity among the full- and part-time workers; management/administration had the second highest rate; research and development had the third highest rate; and writing/editing had the lowest rate (see Table 21). Among humanists whose primary work activities changed from those that were reported in the earlier years, teaching was most likely to be their new primary activity. However, these data indicate a change in work emphasis rather than a change in job, though the latter is certainly possible.

Table 21: Rates of Changes and Continuity in Primary Work Activity (PWA) of Humanities Doctorates, Longitudinal Data from 1977 to 1979, 1981 to 1983, and 1985 to 1987 (in percent)*

Teaching in Time 1**

PWA In Time 2	1977-1979	1981-1983	1985-1987
Teaching	78.4	82.1	85.0
Management/Administration	4.8	4.1	4.5
Research & Development	4.1	2.4	2.2
Consult/Professional Svcs.	0.8	0.4	0.4
Writing/Editing	3.4	2.3	1.4
Other Activities	1.8	0.8	1.2
No Report	2.1	2.1	0.9
Postdoctoral Appointment	0.5	1.3	0.5
Not Employed	4.1	4 5	3.9

Mgmt/Admin in Time 1**

PWA In Time 2	1977-1979	1981-1983	1985-1987
Teaching	16.8	14.3	18.7
Management/Administration	61.5	59.6	62.6
Research & Development	3.8	3.1	2.5
Consult/Professional Svcs.	3.6	5.3	2.4
Writing/Editing	4.0	3.2	2.5
Other Activities	3.7	7.4	6.4
No Report	3.9	2.6	3.1
Postdoctoral Appointment	0.4	0.5	0.6
Not Employed	2.4	3.9	1.2

Research & Development in Time 1**

PWA In Time 2	1977-1979	1981-1983	1985-1987
Teaching	42.8	35.6	33.6
Management/Administration	16.6	8.6	3.9
Research & Development	21.9	29.4	36.4
Consult/Professional Svcs.		4.1	5.2
Writing/Editing	10.6	7.0	6.4
Other Activities	3.4	8.1	7.8
No Report	2.8	1.6	2.0
Postdoctoral Appointment	0.4	1.1	0.8
Not Employed	1.5	4.5	3.9

Writing/Editing in Time 1**

PWA In Time 2	1977-1979	1981-1983	1985-1987
Teaching	37.5	30 8	24.9
Management/Admin.	8.9	5.3	7.8
Research & Development	11.7	6.1	7.7
Consult/Prof.	1.1	3.9	2.6
Writing/Editing	27.6	41.3	41.6
Other	2.6	5.9	6.0
No Report	3.7	2.1	3.6
Postdoctoral Appointment	0.8	0.3	1.1
Not Employed	6.0	4.2	4.7

*These data are based on responses to two consecutive surveys. As individuals who fail to satisfy this criterion are eliminated from this analysis, meaningful estimates of population size cannot be drawn.
** Based on individuals who were in the full- or part-time work force in Time 1.

APPENDIX A: SAMPLING FRAME

Sample Selection

Data from the Survey of Doctorate Recipients (SDR) are collected biennially from a stratified random sample of humanities doctorates. A longitudinal data base has been constructed from the five surveys conducted since 1977. For each survey, adjustments have been made to both the sampling frame (population) and the sample. These adjustments have significant implications when comparing the results of one survey to the results of another.

1977

In 1977, a stratified sample of 15,014 individuals was randomly selected from the population of 74,032 who earned their doctorates in the humanities between January 1, 1930, and June 30, 1976, a 46-year time span. This time frame was set so that the coverage of humanities doctorates would be comparable to that of scientists and engineers, who had been surveyed since 1973. The overall sampling rate was 20.3 percent (see page 71, Table D-6). The sample was stratified by year of doctorate, field of doctorate, sex, and minority status.

The sample was selected from the Doctorate Records File (DRF), which contains information about virtually all Ph.D.s awarded by U.S. universities between 1920 and the present. Data on the DRF file are derived from the annual Survey of Earned Doctorates (SED), another survey conducted by the National Research Council.

Individuals who indicated in the SED that they were foreign citizens and planned to leave the United States following the receipt of their doctoral degrees were not included in the 1977 sampling frame. This exclusion was based on the high probability that these individuals would not return to the U.S. labor force.

1979

To maintain the 42-year time span set for the 1977 survey, the 1979 sampling frame was adjusted to include only those doctorate recipients who had earned their degrees between January 1, 1936, and June 30, 1978. In a study of response bias, it was discovered that the survey nonrespondents consisted of a higher percentage of foreign citizens/residents than did the survey respondents. To adjust for this bias, citizenship was added as

a stratification variable. The 1979 sample consisted of approximately 9,948 humanities doctorates, an overall sampling rate of 12.6 percent (see page 70, Table D-5).

1981

For the 1981 survey, a cohort adjustment again was made to maintain the 42-year time span--January 1, 1938, to June 30, 1980. In addition, the overall sampling rate for FY1973-1976 Ph.D.s was increased from 1.5 percent to 15 percent because of plans to conduct a detailed study of the employment characteristics of recent graduates.

Moreover, on a one-time basis, the 1981 sampling frame was extended to include individuals who earned their doctorates between July 1980 and February 1981. This 8-month extension was made to accommodate a study that required data on the newest doctorate recipients. The 1981 sample totaled 13,676, which yielded an overall sampling rate of 16.1 percent (see page 69, Table D-4).

1983

For the 1983 survey, a sample of 14,979 doctorate recipients was drawn from a sampling frame of 91,790 doctorate recipients, yielding an overall sampling rate of 16.3 percent (see page 68, Table D-3). In keeping with previous surveys, a cohort adjustment was made to the sampling frame to maintain the a 42-year coverage span: the 1983 sampling frame included those doctorate recipients who earned their degrees between January 1, 1940, and June 30, 1982. Additionally, doctorates in religious studies were added to the sampling frame, and a stratified random sample of these cases was added in the survey.

1985

For the 1985 survey, the standard cohort adjustment was made so that only doctorate recipients who earned their degrees between January 1, 1942, and June 30, 1984 were included in the sampling frame. A stratified random sample of 15,504 doctorates was drawn from the sampling frame of 75,787, yielding a 16.2 percent sampling rate (see page 67, Table D-2).

1987

For the 1987 survey, a sample of 16,416 was drawn from a sampling frame of 101,047, yielding an overall sampling rate of 16.3 percent (see page 66, Table D-1). The 1987 sampling frame included those humanities Ph.D.s who earned their degrees between January 1, 1944, and June 30, 1986.

Sampling Rates and Their Effect on Sampling Error

For the 1977 survey, the sampling rate was approximately 20 percent. In 1979, the longitudinal sample was reduced in size because of budgetary constraints. The revised sample, 12.6 percent of the sampling frame, was reviewed to assure that it was large enough to provide reliable estimates of the Ph.D. population.

Obviously, any change in the sample size has an effect on the sampling errors of population estimates. If the proportion of the population possessing a particular characteristic, $\underline{P}$, is being estimated by the statistic p, the standard error of p can be computed by

$$S.E.(p) = [VAR(\underline{P})/n]^{1/2},$$

where $VAR(\underline{P})$ is estimated by $[p(1-p)]$, p equals the sample proportion, and n equals the sample size.

This formula is equivalent to

$$S.E.(p) = [VAR(\underline{P})/n]^{1/2} \text{ or } [VAR(\underline{P})]^{1/2}/(n)^{1/2} = [S.D.(\underline{P})]/(n)^{1/2},$$

where $S.D.(\underline{P})$ is the standard deviation of $\underline{P}$. Holding $S.D.(\underline{P})$ fixed, the sampling error, S.E.(p), will vary as n is adjusted by a factor k:

$$S.E.(p) = [S.D.(\underline{P})]/(kn)^{1/2} \text{ or } S.E.(p) = [S.D.(\underline{P})]/(k)^{1/2} \cdot (n)^{1/2}.$$

If the sample size is increased to n', $k = (n'/n) > 1$. In this case the sampling error is reduced by a factor of $1/(k)^{1/2}$. For example, if the sample p equals 0.2, the estimated

$$S.D.(P) = [0.2(1-0.2)]^{1/2} = 0.4.$$

If n is 100,

$$S.E.(p) = [0.4/(100)^{1/2}] = 0.04.$$

If n is increased to 1600,

$$S.E.(p) = [0.4/(1600)^{1/2}] = 0.01.$$

Here k = 16 and the sampling error is $1/(k)^{1/2}$ of its original value.

However, if the sample size is decreased to n', then $k = (n'/n) < 1$. In this case, the sampling error is increased by a factor of $1/(k)^{1/2}$. In the previous example, if the initial sample size equaled 1600, k = (100/1600) = 1/16. The sampling error increased from 0.01 to 0.04, a factor of 4.

For the 1987 SDR, the sampling frame is 101,047, and the sample is 16,416. If the earlier 20 percent sampling rate had been applied, the 1987 sample would have been 20,209. The expected effect of the sample size reduction on the sampling errors surrounding the estimates of the

total population can be approximated by computing

$$k = (16{,}416/20{,}209) = .812 \text{ and } 1/(k)^{1/2} = 1.10.$$

Thus, for a fixed standard deviation, the sampling error should be approximately 10 percent greater under the 1987 sampling scheme.

In these computations, the effects of the finite population correction factor (fpc) have been ignored. The fpc has little effect on sampling error estimates for large populations and low sampling rates. However, although the overall sampling rate for the 1987 SDR sample is 16.3 percent, sampling rates for the strata range from roughly 2 percent to 100 percent. Thus, computation of sampling errors that takes into account sample stratification will result in lower sampling error estimates than computations that disregard the sample design.

Finally, this discussion applies only to the total sample n and does not address the issue of less than complete survey response, which will of course effectively reduce the sample and thus increase the sampling error.

APPENDIX B: 1987 SURVEY OF HUMANITIES DOCTORATES

1987 SURVEY OF HUMANITIES DOCTORATES

OMB No. 3145-0020
Expires 12-31-88

CONDUCTED BY THE NATIONAL RESEARCH COUNCIL WITH THE SUPPORT OF
THE NATIONAL ENDOWMENT OF THE HUMANITIES

NOTE: THIS INFORMATION IS SOLICITED UNDER THE AUTHORITY OF THE NATIONAL SCIENCE FOUNDATION ACT OF 1950, AS AMENDED. ALL INFORMATION YOU PROVIDE WILL BE TREATED AS CONFIDENTIAL, WILL BE SAFEGUARDED IN ACCORDANCE WITH THE PROVISIONS OF THE PRIVACY ACT OF 1974, AND WILL BE USED FOR STATISTICAL PURPOSES ONLY. INFORMATION WILL BE RELEASED ONLY IN THE FORM OF STATISTICAL SUMMARIES OR IN A FORM WHICH DOES NOT IDENTIFY INFORMATION ABOUT ANY PARTICULAR PERSON. YOUR RESPONSE IS ENTIRELY VOLUNTARY AND YOUR FAILURE TO PROVIDE SOME OR ALL OF THE REQUESTED INFORMATION WILL IN NO WAY ADVERSELY AFFECT YOU.

Please check the following information. If it is inaccurate or missing, please provide the correct information in the spaces provided.

Institution/Year of Doctorate _____

Date of Birth _____

PART I - EMPLOYMENT PROFILE

1. During February 1987, what was your employment status (includes postdoctoral appointment*)?

1___Employed full-time (Go to #6)
2___Employed part-time (Go to #2)
3___Postdoctoral appointment*
A___Full-time (Go to #6) B___Part-time (Go to #2)
4___Unemployed and seeking full-time or part-time employment (Go to #4)
5___Not employed and not seeking employment (Go to #5)
6___Retired and not employed (skip to #23)
7___Other, specify_____

Temporary appointment in academia, industry, or government, the primary purpose of which is to provide for continued education or experience in research.

2. If you held a part-time position during February 1987:

A) Were you seeking a full-time position?
1___Yes 2___No
B) How many part-time positions did you hold?
C) On average, how many hours per week did you work?

_____Hrs

3. What was the MOST important reason for holding a part-time position?

1___Part-time position preferred
2___Full-time position not available
3___Family responsibilities
4___Part-time position is temporary
5___Other, specify_____

(Go to #6)

4. If you were unemployed but seeking employment during February 1987, which of the following factors MOST restricted your job search?

1___Geographic location
2___Family responsibilities
3___Need for part-time employment
4___Other, specify_____
5___No restrictions

(Go to #16)

5. If you were not employed and not seeking work during February 1987, what was the MOST important reason for not seeking work?

1___Temporarily absent for health or personal reasons
2___Family responsibilities
3___Suitable job not available
4___Other, specify_____

(Go to #16)

PART I - EMPLOYMENT PROFILE - Continued

6. Please give the name of your principal employer (company, organization, postdoctoral institution, etc. or, if self-employed, write "self") and actual place of employment during FEBRUARY 1987.

Name of Employer | City | County | State or Foreign Country | ZIP

7. From the Employment Specialities List on page 4, select and enter both the number and title of the employment field most closely related to your principal employment or postdoctoral appointment during FEBRUARY 1987. Write your employment field if it is not on the list.

Number | Employment Field

8. If you were employed during FEBRUARY 1987 in a specialty field other than your Ph.D. field, what was the MOST important reason for your decision to take that position?

1___Better pay
2___More attractive career option
3___Preferred specific geographic location
4___Constraints due to family status
5___Position in Ph.D. field not available
6___Change in career/professional interests
7___Other, specify

9. Which category best describes the type of your principal employment OR postdoctoral appointment during FEBRUARY 1987?

0___Self-employed
1___Business or industry
2___Junior college, 2-year college, technical institute
3___Medical school (including university affiliated hospital or medical center)
4___4-year college
5___University, other than medical school
6___Elementary, middle, or secondary school system
7___Hospital or clinic
8___U.S. military service
9___U.S. government, civilian employee
10___State, local, or other government, specify _____
11___Trade association/professional association
12___Private foundation
13___Museum
14___Historical organization
15___Research center/library/archives
16___Other nonprofit organization
17___Other, specify _____

10. If you were employed in a nonacademic job in FEBRUARY 1987, what was the MOST important reason for your decision to enter the job?

1___Better pay
2___Preferred other career options
3___Preferred specific geographic location
4___Constraints due to family status
5___Academic position not available
6___Change in career/professional interests
7___Other, specify _____

11. If you were employed by an institution of higher education in February 1987:

A) What was your *faculty* rank?

1___Professor
2___Associate professor
3___Assistant professor
4___Instructor
5___Lecturer
6___Adjunct faculty
7___Other, specify _____ Title
8___Does Not Apply

B) What was your tenure status?

1___Tenured, in 19___
2___Not tenured, in tenure track
3___Not tenured, not in tenure track
4___Tenure not applicable

12. If your rank is "adjunct faculty" or equivalent, please answer the following questions; otherwise skip to #13.

A) How many years have you been employed in the adjunct status?_____Yrs

B) How many courses do you teach in a year? _____

C) What was the average payment per course? $_____

D) Do you teach on an annual contract?
1___Yes 2___No

E) At how many institutions do you teach? _____

F) Do you have an opportunity to transfer (if you wish) from adjunct to regular status?
1___Yes 2___No

PART I - EMPLOYMENT PROFILE - Continued

13. From the activities listed below, select your primary and secondary work activities for your principal job (as reported in #6), in terms of time devoted during a typical week.

Enter the appropriate code (1-17) for each in the specified space.

_____Primary activity _____Secondary activity

1. Teaching
2. Basic/applied research
3. Development of equipment, products, systems, data
4. Writing
5. Editing
6. Professional service to individuals
7. Management/administration of educational programs
8. Management/administration of other programs
9. Consulting
10. Operations—production, maintenance, construction, installation
11. Information management (including record management and archival work)
12. Sales, marketing, purchasing, customer and public relations
13. Statistical work—survey work, forecasting, statistical analysis
14. Computer applications
15. Institutional fund raising
16. Performing arts
17. Other, specify: _____

14. During a typical week, what percentage of your professional work time did you devote to the items listed in #13?

Entries should total 100%

_____% Primary work activity

_____% Secondary work activity

_____% Other activities

100% = TOTAL

15. What was the basic annual salary* associated with your principal professional employment during FEBRUARY 1987? If you were on a postdoctoral appointment (see question #1 for definition), what was your stipend plus allowances?

$_____per year

Check whether salary was for _____9-10 months or _____11-12 months

**Basic salary is your annual salary before deduction for income tax, social security, retirement, etc., but does not include bonuses, overtime, summer teaching, or other payment for professional work.*

16. Since receiving the doctorate, how many full-time equivalent (FTE) years of professional work experience have you had? _____Year(s)

17a. Was any of the work in which you were engaged during the past year supported or sponsored by U.S. Government funds?

1___Yes 2___No 3___Don't Know

17b. If YES, which of the following supported your work? Mark all that apply.

1___National Endowment for the Humanities
2___National Endowment for the Arts
3___Department of Defense
4___Department of Education
5___Smithsonian Institution
6___Other, specify
7___Don't know source agency

18. During your graduate program, did you receive formal training in the use of computers for research or teaching?

1___Yes 2___No

19. After receiving your doctorate, did you have to acquire formal training in any of the following areas in order to obtain your present position?

1___Yes
2___No

If YES, specify below:

1___Foreign languages
2___Computer science
3___Management and administration
4___Survey research and statistics
5___Other, specify _____

20. During the past 2 years, have you published any professional/scholarly writing (or had it accepted for publication)?

1___Yes 2___No

If YES, how many in each category?

1___Book or monograph (author or co-author)
2___Book or monograph (editor or co-editor)
3___Chapter in a scholarly book
4___Article in a refereed journal
5___Book review in a refereed journal
6___Article in newspaper/magazine

21. Have you served on a scholarly committee (not including one at your educational institution) during the past 2 years?

1___Yes 2___No

If YES, in what capacity?

1___Chair
2___Member
3___Other, specify_____

22. With reference to your job reported in #6, how would you rate your job satisfaction?

1___Very high
2___High
3___Average
4___Low
5___Very low

PART II - DEMOGRAPHIC CHARACTERISTICS

23. Citizenship

1___U.S. Native Born
2___U.S. Naturalized
3___Non-U.S., Immigrant (Perm. Res.)
4___Non-U.S., Non-Immigrant (Temp. Res.)

If NON-U.S., specify country of citizenship

_____

24a. What is your racial background?

1___American Indian or Alaskan Native
2___Asian or Pacific Islander
3___Black
4___White

24b. Is your ethnic heritage Hispanic?

1___Yes
2___No

If YES, is it:
1___Mexican American
2___Puerto Rican
3___Other Hispanic

25. What is your marital status?

1___Never Married
2___Married
3___Separated, Divorced
4___Widowed

26. Thank you for completing this questionnaire. Please return the completed form in the enclosed envelope to the National Research Council, JH630, 2101 Constitution Avenue, Washington, D.C. 20418.

EMPLOYMENT SPECIALTIES LIST

MATHEMATICAL SCIENCES

030 - Logic
099 - Mathematics, Other

COMPUTER AND INFORMATION SCIENCES

081 - Information Sciences & Systems
072 - Software Systems
079 - Computer Sciences, Other

PHYSICS & ASTRONOMY

199 - Physics

CHEMISTRY

299 - Chemistry

EARTH, ENVIRONMENTAL, AND MARINE SCIENCES

399 - Earth Sciences
389 - Environmental Sciences
397 - Marine Sciences

ENGINEERING

499 - Engineering

AGRICULTURAL SCIENCES

519 - Agricultural Sciences

MEDICAL SCIENCES

530 - Audiology & Speech Pathology
520 - Medicine & Surgery
539 - Medical Sciences, Other

BIOLOGICAL SCIENCES

599 - Biological Sciences

PSYCHOLOGY

600 - Clinical
610 - Counseling & Guidance
699 - Psychology, Other

SOCIAL SCIENCES

700 - Anthropology
703 - Archeology
745 - Area Studies*
706 - Communications
760 - Criminology & Criminal Justice
730 - Demography
725 - Econometrics
720 - Economics
740 - Geography
775 - History & Philosophy of Sci.
755 - International Relations
709 - Linguistics
751 - Political Sci. & Government
752 - Public Administration
753 - Public Policy Studies
727 - Social Statistics
710 - Sociology
770 - Urban & Regional Planning
798 - Social Sciences, General
799 - Social Sciences, Other*

HUMANITIES

811 - American Literature
827 - Classics
836 - Comparative Literature
813 - English Language
814 - English Literature
823 - French
821 - German
826 - Italian
822 - Russian
824 - Spanish & Portuguese
829 - Languages, Other*
839 - Letters, Other*

804 - History, American
805 - History, European
806 - History, Other*

808 - American Studies
802 - Art History & Criticism
830 - Music
834 - Philosophy (see also 030)
833 - Religious Studies (see also 881)
831 - Speech & Debate
809 - Theatre & Theatre Criticism
878 - Humanities, General
879 - Humanities, Other*

EDUCATION AND PROFESSIONAL FIELDS

801 - Applied Art
888 - Architec. & Environ. Design
882 - Business & Management
883 - Home Economics
884 - Journalism
886 - Law, Jurisprudence
891 - Library & Archival Sciences
887 - Social Work
881 - Theology (see also 833)
896 - Professional Fields, General
897 - Professional Fields, Other*

938 - Education (other than teaching in a field listed above)

899 - Other Fields*

**Identify the specific field in the space provided in #7 on the questionnaire.*

APPENDIX C: SAMPLING ERROR

Because the SDR estimates are based on a sample, they may vary from the values obtained had all units in the target population been surveyed using the same questionnaires and data-collection methods. Two types of error are possible when population estimates are derived from measures of a sample: sampling error and nonsampling error.

Nonsampling error may be introduced during any part of the survey operation. Response variability, one such type of nonsampling error, may include variability in interpretation of questionnaire items or in providing incorrect or incomplete information, whether deliberate or inadvertent. Inability to obtain data on all sample cases is another type of nonsampling error. Error may also be introduced in processing responses (as in coding and editing) or in generating the final estimates. Nonsampling error that is randomly introduced will increase the variance in the data and, hence, will be reflected, in part, in the standard error estimates. Error that is biased, or constant in one direction, will contribute to bias in the estimate. This bias, however, is not reflected in the estimates of standard error.

Sampling error is the variation that occurs by chance because a sample, rather than the entire population, is surveyed. The particular sample used to estimate the 1987 U.S. population of humanities doctorates was one of a large number of possible samples that could have been selected using the same sample design and size. Estimates based on each of these samples would have differed from one another. In theory, the deviation of each of the sample estimates from the average of all possible samples would provide the basis for estimating the sampling error associated with a particular estimate derived from an individual sample. However, the sampling error may be estimated by determining the standard error of the survey estimate. "The term standard error is ordinarily used only in referring to the standard deviation of all possible sample estimates . . . [of some] summary measure estimated from [the] samples."[1] In other words, if all possible samples had been selected from the target population using the given sample design and size and if a particular population estimate had been derived from each of these samples, the standard deviation of the distribution of sample estimates would be the standard error. Although all samples have not been measured (and rarely are), the standard error may be estimated from a single sample. The sample estimate then, together with its estimated standard error, may be

[1] M. H. Hansen, W. N. Hurwitz, and W. G. Madow, Sample Survey Methods and Theory, vol. 1, New York: John Wiley and Sons, 1953, p. 115.

used to construct confidence intervals--bounds set around the sample estimate in which, with some prescribed probability, the average estimate from all possible samples will lie.

Method for Estimating Standard Errors of Totals and Percentages[2]

The number of possible results for which standard error estimates may have been determined was extremely large (owing to the number of variables measured in the survey, the number of demographic and field-category groups for which the measures may be tallied, and the values--such as percents and medians--that may be derived using survey estimates). Both time and cost limitations prohibited the determination of standard error estimates for each of the possible results. However, a method for generalizing standard error values from a limited number of characteristics was used, allowing application to a wide variety of survey estimates.

One of the first steps in generalizing the standard error estimates for the humanities population and select subpopulations desired was to determine for each of these populations the rel-variances associated with each of a set of characteristics (a set of 23 characteristics was used to provide a range of values--small, medium, and large estimated characteristics). Rel-variance, or "relative variance," is defined as the variance of an estimate devided by the square of that estimate,[3] or, in the mathematical notation,

$$v_{x'}^2 = \frac{\sigma_{x'}^2}{x'^2}$$

The variance of each estimate, x', from the SDR was determined by

$$\sigma_{x'}^2 = \sum_h N_h^2 (1 - f_h) \frac{N_h}{N_h - 1} \frac{(p_h q_h)}{n_{rh}}$$

and the square of the estimate by

$$x'^2 = \left[\sum_h \frac{N_h}{n_h} \left(\frac{n_h}{n_{rh}} \right) x_h \right]^2,$$

---

[2]The method described for estimating standard errors of totals and percentages was taken from J. Steinberg "A Procedure for Estimating and Generalizing Standard Errors of Estimated Totals and Percentages for the Survey of Doctorate Recipients, 1986" (unpublished document). This method is also referenced in a number of sections in Hansen, et al. (op. cit.), Chapters 5 and 12.

[3]Hansen, et al., op. cit., p. 124.

where N_h = Universe count of the target population in stratum h;[4]
n_h = Size of the sample selected from stratum h;[4]
n_{rh} = Responding sample in stratum h;
x_h = Count of characteristic X among n_{rh};
f_h = n_h/N_h;
p_h = x_h/n_{rh}; and
q_h = $1 - p_h$.

The rel-variances determined for each set of characteristics then were used to develop a generalized rel-variance function of the form $v^2_{x'} = a + b/x'$, where x' represents a survey estimate, and the a and b parameters are regression coefficients. The method of fitting the function minimizes the squared relative residuals of v^2_x.[5] The values of a and b are determined through a series of successive iterations of the rel-variance function until values of the a and b parameters in successive iterations differ negligibly. The final set of a and b parameters obtained through these successive iterations were ultimately used to calculate approximate standard errors of totals as derived from the formula

$$\sigma_{x'} = \sqrt{ax^2 + bx}$$

Standard Errors of Estimated Totals

Standard error values have been computed for the estimated totals in the humanities disciplines (see Table C-1). Standard error values were calculated using the generalized-variance derived parameters, a and b, along with the formula for standard error above and were rounded to the nearest multiple of 10. Standard error estimates for survey totals not shown in this table either may be determined through linear interpolation or may be calculated directly using the above formula with the appropriate values of a and b (as found in Table C-2).

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[4]Because adjustments for inactives and the presurvey deceased are made to the population and sample in each successive survey--yielding, in effect, a new target population and survey sample--the target population count for each stratum was used for the population count, and the survey sample count was used for the sample count (see Appendix E).
[5]Hansen, et al., op. cit., p. 577.

Table C-1: Approximate Standard Errors of Estimated Number of Humanities Doctorates, by Field, 1987

Estimated Number	All Fields	Amer. History	Other History	Art History	Music	Speech/ Theater	Philo- sophy	English/ American L & L	Classical L & L	Modern L & L	Other Humanities
50	30	40	40	20	20	20	30	40	10	20	30
100	50	60	60	20	30	30	40	60	20	30	40
200	60	80	80	30	50	40	50	80	30	40	50
500	100	120	130	40	80	70	80	120	40	70	80
700	120	150	150	50	90	80	90	140	40	80	100
1000	140	170	180	60	100	90	110	170	50	100	120
2500	220	270	270	50	140	120	150	260	---	150	190
5000	310	360	360	---	140	---	160	350	---	150	190
10000	430	---	440	---	---	---	---	---	---	---	---
25000	620	---	---	---	---	---	---	---	---	---	---
50000	720	---	---	---	---	---	---	---	---	---	---
75000	630	---	---	---	---	---	---	---	---	---	---

TABLE C-2: Listing of a and b Parameters (Select Demographic Groups in Humanities Fields), 1987

Field		Total	Female	Whites	Asians	Blacks	Native Americans	All Races Combined	Hispanic
Total All Fields	a	-0.000203	-0.000328	-0.000215	0.0010506	0.000947	0.137586	-0.001014	0.002181
	b	20.4834	10.2854	21.0326	4.4272	4.4173	0.8171	8.1068	7.3202
American History	a	-0.000908	-0.000789	-0.001016	*	-0.008084	*	0.004917	*
	b	30.7573	9.1173	31.9984	*	3.8512	*	3.0393	*
Other History	a	-0.001286	-0.002485	-0.001366	0.03242	0.011584	*	-0.007476	*
	b	32.226	11.0858	33.187	4.1265	4.5025	*	11.1835	*
Art History	a	-0.0014	-0.001597	-0.001514	0.097115	*	*	0.032463	*
	b	4.5702	3.0072	4.5834	2.5897	*	*	3.0544	*
Music	a	-0.001629	-0.001818	-0.001786	-0.001114	-0.00273	*	-0.001364	0.038635
	b	12.1823	3.601	12.7342	2.021	6.0887	*	4.9602	1.0707
Speech/Theater	a	-0.001669	-0.001435	-0.001736	*	0.031972	*	0.052883	*
	b	9.9354	2.8928	10.1477	*	0.1642	*	0.1017	*
Philosophy	a	-0.001673	-0.002141	-0.001763	0.00854	*	*	0.020065	0.101376
	b	13.3385	2.8317	13.5613	5.4924	*	*	5.0656	1.174
English & Am Lang/Lit	a	-0.00119	-0.002049	-0.001239	0.034475	*	*	0.022431	0.142932
	b	30.5317	19.2736	31.1557	2.164	*	*	1.0335	1.4346
Classical Lang/Lit	a	-0.001393	-0.00145	-0.001375	*	*	*	*	*
	b	3.7334	1.5818	3.7378	*	*	*	*	*
Modern Language/Lit	a	-0.000509	-0.001005	-0.000536	0.003543	0.007022	*	0.007396	0.003609
	b	10.0972	8.229	10.3379	2.3317	1.4691	*	2.534	3.6621
Other Humanities	a	0.000285	0.000891	0.000226	0.00247	0.003563	*	0.002534	0.124796
	b	14.2524	5.5847	14.7685	3.168	1.3974	*	2.0419	0.948

*Estimates of standard errors are not shown for subpopulations with fewer than 20 respondents or when relatively large standard errors were associated with estimates of even 90 percent or more of the subpopulation.

Standard Errors of Estimated Percents

The standard error of an estimated percent based upon the ratio of two estimated totals, where the numerator is a subset of the denominator, may be approximated by

$$\sigma_p = p\sqrt{v_x^2 + v_y^2 + \frac{\sigma_d^2 - \sigma_x^2 - \sigma_y^2}{xy}}$$

where

$$v_x^2 = a + b/x;$$

$$v_y^2 = a + b/y;$$

$$\sigma_x^2 = ax^2 + bx;$$

$$\sigma_y^2 = ay^2 + by;$$

$$\sigma_d^2 = ad^2 + bd;$$

$$d = y - x; \text{ and}$$

$$p = x/y(100).$$

Through algebraic derivation, the standard error of the estimated percent simplifies to:

$$\sigma_p \doteq p\sqrt{b\left(\frac{1}{x} - \frac{1}{y}\right)}$$

The standard errors of estimated percents that are provided in Table C-3 were derived using this simplified formula. Table C-3 is developed for the humanities population in total. The formula above may be used to calculate standard errors of percents not shown in this table.

Table C-3. Approximate Standard Errors of Estimated Percent of Humanities Doctorates, 1987

Base Number of Percent	Estimated Percent						
	1 OR 99	2 OR 98	5 OR 95	10 OR 90	15 OR 85	25 OR 75	50
50	6.4	9.0	13.9	19.2	22.9	27.7	32.0
100	4.5	6.3	9.9	13.6	16.2	19.6	22.6
200	3.2	4.5	7.0	9.6	11.4	13.9	16.0
500	2.0	2.8	4.4	6.1	7.2	8.8	10.1
700	1.7	2.4	3.7	5.1	6.1	7.4	8.6
1000	1.4	2.0	3.1	4.3	5.1	6.2	7.2
2500	0.9	1.3	2.0	2.7	3.2	3.9	4.5
5000	0.6	0.9	1.4	1.9	2.3	2.8	3.2
10000	0.5	0.6	1.0	1.4	1.6	2.0	2.3
25000	0.3	0.4	0.6	0.9	1.0	1.2	1.4
50000	0.2	0.3	0.4	0.6	0.7	0.9	1.0
75000	0.2	0.2	0.4	0.5	0.6	0.7	0.8

Confidence Intervals

Once the standard error of an estimate has been determined, one can develop confidence intervals: ranges that with specified probability would include the average estimate of all possible samples. Using the standard error value, one may determine ranges for any of a variety of confidence levels. Applying ± 1.96 units of standard error to the survey estimate will provide an approximately 95 percent confidence interval; applying ± 1 unit of standard error to the survey estimate will provide an approximately 68 percent confidence interval; and applying ± 2.58 units of standard error will provide an approximately 99 percent confidence interval.[6]

Limitations of the Standard Error Estimates

As stated, standard error estimates provided in this report were derived from generalized functions based upon a limited set of characteristics (or survey estimates). While this method provides good approximations of standard errors associated with most survey results, it may overstate the error associated with estimates drawn from strata with high sampling fractions. However, the only way to avoid this overstatement is to calculate the standard errors directly from the raw data, forgoing the more practical, more widely applicable generalized method.

[6]For setting other confidence levels, the reader may refer to virtually any standard statistical textbook to obtain the applicable multiple of standard error.

APPENDIX D: RESPONSE RATES

TABLE D-1: Response Rates for the 1987 Survey of Doctorate Recipients in the Humanities

1987	Sampling Frame[a] (N)	Sample (n)	Survey Sample[b] (n)	Contacted[c] (n)	Survey Responses[d] (n)	Response Rates[e] A (%)	Response Rates[e] B (%)
Total	101047	16416	15828	14433	8941	56.5	61.9
Field of Doctorate/Employment							
History	23152	1961	1896	1752	1139	60.1	65.0
Art History	2834	1013	976	915	567	58.1	62.0
Music	7323	1158	1112	1027	674	60.6	65.6
Speech	4955	942	832	765	504	60.6	65.9
Philosophy	7511	1502	1455	1332	794	54.6	59.6
English/American Literature	26645	2437	2358	2152	1296	55.0	60.2
Classical Language/Literature	2114	802	761	701	446	58.6	63.6
Modern Language/Literature	14959	3279	3182	2905	1763	55.4	60.7
Religious Studies	2058	510	506	448	313	61.9	69.9
Other Humanities	4736	1089	1069	966	625	58.5	64.7
Languages[f]	954	393	387	323	181	46.8	56.0
Other Humanitites[f]	2014	980	953	857	497	52.2	58.0
All Humanities Fields[f]	1792	350	341	290	142	41.6	49.0
Year of Doctorate							
CY1944-CY1957	11869	1428	1135	1046	627	55.2	59.9
CY1958-FY1969	23422	2638	2463	2286	1390	56.4	60.8
FY1970-FY1976	31245	6822	6727	6159	3693	54.9	60.0
FY1977-FY1982	21968	3361	3336	3039	1883	56.4	62.0
FY1983-FY1984	6367	1101	1101	989	673	61.1	68.0
FY1985-FY1986	6171	1061	1061	910	675	63.6	74.2
Merged Cohorts[g]	5	5	5	4			
Gender							
Male	71116	8220	7913	7212	4348	54.9	60.3
Female	29931	8196	7915	7221	4593	58.0	63.6
Race/Ethnic Group							
White/Unknown	96611	13921	13384	12237	7695	57.5	62.9
Minority Group[h]	4436	2495	2444	2196	1246	51.0	56.7
Citizenship							
U.S.	84060	13496	13216	12129	7662	58.0	63.2
Foreign	5118	1492	1477	1258	652	44.1	51.8
Unknown	11869	1428	1135	1046	627	55.2	59.9

[a] The sampling frame includes those deceased and those residing in foreign countries; hence, these numbers exceed the population estimates shown in the other tables of this report.
[b] The survey sample is the sample size minus persons known to be deceased or out of scope prior to the survey. The "out of scope" classification is assigned to an individual who indicated on a previous survey that he or she holds a Ph.D. from a foreign institution, is a foreign citizen, and resides in a foreign country.
[c] The number assumed contacted equals the survey sample minus those individuals for whom no valid address could be obtained.
[d] Responses include individuals found to be deceased or residing in a foreign country at the time the recent survey was conducted.
[e] Response rate "A" is the number of survey responses divided by the number in the survey sample. Response rate "B" is the number of survey responses divided by the number presumed to have been contacted.
[f] Merged fields created for certain small subgroups when sample was reduced.
[g] Merged cohorts created for certain small subgroups when sample was reduced.
[h] Includes only those individuals whose racial/ethnic group was known at the time the sample was selected.

TABLE D-2: Response Rates for the 1985 Survey of Doctorate Recipients in the Humanities

1985	Sampling Frame[a] (N)	Sample (n)	Survey Sample[b] (n)	Contacted[c] (n)	Survey Responses[d] (n)	Response Rates[e] A (%)	Response Rates[e] B (%)
Total	95787	15504	14917	13560	9047	60.6	66.7
Field of Doctorate/Employment							
History	22537	1903	1833	1667	1166	63.6	69.9
Art History	2620	960	924	858	576	62.3	67.1
Music	6537	1055	1012	946	674	66.6	71.2
Speech	4970	936	827	762	515	62.3	67.6
Philosophy	7174	1467	1415	1289	844	59.6	65.5
English/American Literature	25420	2360	2281	2057	1380	60.5	67.1
Classical Language/Literature	2075	782	743	686	473	63.7	69.0
Modern Language/Literature	14359	3096	3002	2721	1782	59.4	65.5
Religious Studies	1731	458	456	413	312	68.4	75.5
Other Humanities	4065	964	941	858	585	62.2	68.2
Languages[f]	821	339	334	288	164	49.1	56.9
Other Humanities[f]	1686	834	807	717	426	52.8	59.4
All Humanities Fields[f]	1792	350	342	298	150	43.9	50.3
Year of Doctorate							
CY1942-CY1957	12856	1581	1253	1147	760	60.7	66.3
CY1958-FY1969	23422	2638	2482	2306	1526	61.5	66.2
FY1970-FY1976	31245	6822	6739	6126	3973	59.0	64.9
FY1977-FY1982	21968	3361	3341	3033	2071	62.0	68.3
FY1983-FY1984	6291	1097	1097	943	715	65.2	75.8
Merged Cohorts[g]	5	5	5	5	2	40.0	40.0
Gender							
Male	68390	7852	7554	6875	4518	59.8	65.7
Female	27397	7652	7363	6685	4529	61.5	67.7
Race/Ethnic Group							
White/Unknown	91915	13305	12766	11651	7886	61.8	67.7
Minority Group[h]	3872	2199	2151	1909	1161	54.0	60.8
Citizenship							
U.S.	78317	12603	12357	11292	7705	62.4	68.2
Foreign	4614	1320	1307	1121	582	44.5	51.9
Unknown	12856	1581	1253	1147	760	60.7	66.3

[a] The sampling frame includes those deceased and those residing in foreign countries; hence, these numbers exceed the population estimates shown in the other tables of this report.
[b] The survey sample is the sample size minus persons known to be deceased or out of scope prior to the survey. The "out of scope" classification is assigned to an individual who indicated on a previous survey that he or she holds a Ph.D. from a foreign institution, is a foreign citizen, and resides in a foreign country.
[c] The number assumed contacted equals the survey sample minus those individuals for whom no valid address could be obtained.
[d] Responses include individuals found to be deceased or residing in a foreign country at the time the recent survey was conducted.
[e] Response rate "A" is the number of survey responses divided by the number in the survey sample. Response rate "B" is the number of survey responses divided by the number presumed to have been contacted.
[f] Merged fields created for certain small subgroups when sample was reduced.
[g] Merged cohorts created for certain small subgroups when sample was reduced.
[h] Includes only those individuals whose racial/ethnic group was known at the time the sample was selected.

TABLE D-3: Response Rates for the 1983 Survey of Doctorate Recipients in the Humanities

1983	Sampling Frame[a] (N)	Sample (n)	Survey Sample[b] (n)	Contacted[c] (n)	Survey Responses[d] (n)	Response Rates[e] A (%)	Response Rates[e] B (%)
Total	91790	14979	14405	12925	9266	64.3	71.7
Field of Doctorate/Employment							
History	21752	1825	1760	1605	1189	67.6	74.1
Art History	2419	911	872	809	600	68.8	74.2
Music	5798	962	921	851	661	71.8	77.7
Speech	4952	919	817	752	523	64.0	69.5
Philosophy	6875	1428	1385	1224	854	61.7	69.8
English/American Literature	24463	2285	2209	1993	1410	63.8	70.7
Classical Language/Literature	2067	762	727	659	496	68.2	75.3
Modern Language/Literature	13786	2894	2804	2523	1784	63.6	70.7
Religious Studies	1439	409	409	299	216	52.8	72.2
Other Humanities	4214	1149	1106	991	765	69.2	77.2
Languages[f]	686	285	280	241	154	55.0	63.9
Other Humanities[f]	1533	792	764	677	432	56.5	63.8
All Humanities Fields[f]	1806	358	351	301	182	51.9	60.5
Year of Doctorate							
CY1940-CY1957	14227	1811	1447	1331	941	65.0	70.7
CY1958-FY1969	23587	2760	2622	2449	1735	66.2	70.8
FY1970-FY1976	31681	6968	6903	6144	4325	62.7	70.4
FY1977-FY1980	15575	2365	2359	2082	1548	65.6	74.4
FY1981-FY1982	6715	1070	1069	915	715	66.9	78.1
Merged Cohorts[g]	5	5	5	4	2	40.0	50.0
Gender							
Male	66496	7686	7392	6608	4653	62.9	70.4
Female	25294	7293	7013	6317	4613	65.8	73.0
Race/Ethnic Group							
White/Unknown	88404	13009	12479	11232	8142	65.2	72.5
Minority Group[h]	3386	1970	1926	1693	1124	58.4	66.4
Citizenship							
U.S.	73343	11977	11779	10611	7741	65.7	73.0
Foreign	4220	1191	1179	983	584	49.5	59.4
Unknown	14227	1811	1447	1331	941	65.0	70.7

[a] The sampling frame includes those deceased and those residing in foreign countries; hence, these numbers exceed the population estimates shown in the other tables of this report.
[b] The survey sample is the sample size minus persons known to be deceased or out of scope prior to the survey. The "out of scope" classification is assigned to an individual who indicated on a previous survey that he or she holds a Ph.D. from a foreign institution, is a foreign citizen, and resides in a foreign country.
[c] The number assumed contacted equals the survey sample minus those individuals for whom no valid address could be obtained.
[d] Responses include individuals found to be deceased or residing in a foreign country at the time the recent survey was conducted.
[e] Response rate "A" is the number of survey responses divided by the number in the survey sample. Response rate "B" is the number of survey responses divided by the number presumed to have been contacted.
[f] Merged fields created for certain small subgroups when sample was reduced.
[g] Merged cohorts created for certain small subgroups when sample was reduced.
[h] Includes only those individuals whose racial/ethnic group was known at the time the sample was selected.

TABLE D-4: Response Rates for the 1981 Survey of Doctorate Recipients in the Humanities

1981	Sampling Frame[a] (N)	Sample (n)	Survey Sample[b] (n)	Contacted[c] (n)	Survey Responses[d] (n)	Response Rates[e] A (%)	Response Rates[e] B (%)
Total	85037	13676	13121	11738	7850	59.8	66.9
Field of Doctorate/Employment							
History	20790	1746	1682	1489	1040	61.8	69.8
Art History	2163	840	802	731	497	62.0	68.0
Music	5125	877	839	776	574	68.4	74.0
Speech	4920	902	795	725	500	62.9	69.0
Philosophy	6519	1393	1353	1160	737	54.5	63.5
English/American Literature	23259	2201	2127	1844	1232	57.9	66.8
Classical Language/Literature	2036	732	697	646	447	64.1	69.2
Modern Language/Literature	13093	2694	2611	2367	1527	58.5	64.5
Other Humanities	3496	1036	994	910	669	67.3	73.5
Languages[f]	563	236	231	198	114	49.4	57.6
Other Humanities[f]	1269	661	639	578	340	53.2	58.8
All Humanities Fields[f]	1804	358	351	314	173	49.3	55.1
Year of Doctorate							
CY1938-CY1957	15411	1950	1571	1442	978	62.3	67.8
CY1958-FY1965	12076	1456	1364	1292	877	64.3	67.9
FY1966-FY1969	11485	1304	1264	1177	783	61.9	66.5
FY1970-FY1974	22019	4037	4006	3538	2316	57.8	65.5
FY1975-FY1978	16914	3837	3824	3334	2192	57.3	65.7
FY1979-FY1980	7112	1087	1087	950	702	64.6	73.9
Merged Cohorts[g]	20	5	5	5	2	40.0	40.0
Gender							
Male	62518	7022	6744	6067	3974	58.9	65.5
Female	22519	6654	6377	5671	3876	60.8	68.3
Race/Ethnic Group							
White/Unknown	82243	12055	11529	10305	7001	60.7	67.9
Minority Group[h]	2794	1621	1592	1433	849	53.3	59.2
Citizenship							
U.S.	65907	10699	10534	9417	6414	60.9	68.1
Foreign	3719	1027	1016	879	458	45.1	52.1
Unknown	15411	1950	1571	1442	978	62.3	67.8

[a] The sampling frame includes those deceased and those residing in foreign countries; hence, these numbers exceed the population estimates shown in the other tables of this report.
[b] The survey sample is the sample size minus persons known to be deceased or out of scope prior to the survey. The "out of scope" classification is assigned to an individual who indicated on a previous survey that he or she holds a Ph.D. from a foreign institution, is a foreign citizen, and resides in a foreign country.
[c] The number assumed contacted equals the survey sample minus those individuals for whom no valid address could be obtained.
[d] Responses include individuals found to be deceased or residing in a foreign country at the time the recent survey was conducted.
[e] Response rate "A" is the number of survey responses divided by the number in the survey sample. Response rate "B" is the number of survey responses divided by the number presumed to have been contacted.
[f] Merged fields created for certain small subgroups when sample was reduced.
[g] Merged cohorts created for certain small subgroups when sample was reduced.
[h] Includes only those individuals whose racial/ethnic group was known at the time the sample was selected.

TABLE D-5: Response Rates for the 1979 Survey of Doctorate Recipients in the Humanities

1979	Sampling Frame[a] (N)	Sample (n)	Survey Sample[b] (n)	Contacted[c] (n)	Survey Responses[d] (n)	Response Rates[e] A (%)	B (%)
Total	79037	9948	9542	8809	6512	68.2	73.9
Field of Doctorate/Employment							
History	19627	1141	1088	1023	763	70.1	74.6
Art History	1893	666	643	603	470	73.1	77.9
Music	4395	686	660	618	496	75.2	80.3
Speech	4857	786	749	699	533	71.2	76.3
Philosophy	6158	804	774	708	492	63.6	69.5
English/American Literature	21782	1227	1158	1084	786	67.9	72.5
Classical Language/Literature	2036	635	602	561	402	66.8	71.7
Modern Language/Literature	12268	2156	2080	1892	1393	67.0	73.6
Other Humanities	2805	801	764	711	566	74.1	79.6
Languages[f]	453	194	190	170	103	54.2	60.6
Other Humanities[f]	959	494	480	434	308	64.2	71.0
All Humanities Fields[f]	1804	358	354	306	200	56.5	65.4
Year of Doctorate							
CY1936-CY1957	16515	2073	1743	1582	1192	68.4	75.3
CY1958-FY1965	12091	1456	1410	1320	974	69.1	73.8
FY1966-FY1969	11485	1304	1287	1188	858	66.7	72.2
FY1970-FY1974	22019	2659	2647	2444	1770	66.9	72.4
FY1975-FY1976	9003	1252	1251	1165	854	68.3	73.3
FY1977-FY1978	7919	1199	1199	1105	863	72.0	78.1
Merged Cohorts[g]	5	5	5	5	1	20.0	20.0
Gender							
Male	59146	5208	5009	4658	3394	67.8	72.9
Female	19891	4740	4533	4151	3118	68.8	75.1
Race/Ethnic Group							
White/Unknown	77004	8863	8478	7842	5864	69.2	74.8
Minority Group[h]	2033	1085	1064	967	648	60.9	67.0
Citizenship							
U.S.	59177	7083	7012	6543	4890	69.7	74.7
Foreign	3345	792	787	684	430	54.6	62.9
Unknown	16515	2073	1743	1582	1192	68.4	75.3

[a] The sampling frame includes those deceased and those residing in foreign countries; hence, these numbers exceed the population estimates shown in the other tables of this report.
[b] The survey sample is the sample size minus persons known to be deceased or out of scope prior to the survey. The "out of scope" classification is assigned to an individual who indicated on a previous survey that he or she holds a Ph.D. from a foreign institution, is a foreign citizen, and resides in a foreign country.
[c] The number assumed contacted equals the survey sample minus those individuals for whom no valid address could be obtained.
[d] Responses include individuals found to be deceased or residing in a foreign country at the time the recent survey was conducted.
[e] Response rate "A" is the number of survey responses divided by the number in the survey sample. Response rate "B" is the number of survey responses divided by the number presumed to have been contacted.
[f] Merged fields created for certain small subgroups when sample was reduced.
[g] Merged cohorts created for certain small subgroups when sample was reduced.
[h] Includes only those individuals whose racial/ethnic group was known at the time the sample was selected.

TABLE D-6: Response Rates for the 1977 Survey of Doctorate Recipients in the Humanities

1977	Sampling Frame[a] (N)	Sample (n)	Survey Sample[b] (n)	Contacted[c] (n)	Survey Responses[d] (n)	Response Rates[e] A (%)	Response Rates[e] B (%)
Total	74032	15014	14267	13211	9455	66.3	71.6
Field of Doctorate/Employment							
History	19109	2705	2541	2380	1746	68.7	73.4
Art History	1722	643	616	575	430	69.8	74.8
Music	3910	929	890	835	621	69.8	74.4
Speech	4913	1038	991	926	653	65.9	70.5
Philosophy	6214	1186	1131	1030	681	60.2	66.1
English/American Literature	20891	2859	2730	2548	1830	67.0	71.8
Classical Language/Literature	2282	706	661	612	448	67.8	73.2
Modern Language/Literature	12499	3763	3578	3248	2245	62.7	69.1
Other Humanities	2492	1185	1129	1057	801	70.9	75.8
Year of Doctorate							
CY1930-CY1949	10332	2388	1839	1605	1157	62.9	72.1
CY1950-FY1961	14001	2604	2460	2309	1648	67.0	71.4
FY1962-FY1969	18664	3451	3407	3210	2347	68.9	73.1
FY1970-FY1974	22016	4282	4273	3923	2715	63.5	69.2
FY1975-FY1976	9019	2289	2288	2164	1588	69.4	73.4
Gender							
Male	56463	9878	9380	8788	6202	66.1	70.6
Female	17569	5136	4887	4423	3253	66.6	73.5
Race/Ethnic Group							
White/Unknown	72627	13610	12890	11943	8659	67.2	72.5
Minority Group[f]	1405	1404	1377	1268	796	57.8	62.8

[a] The sampling frame includes those deceased and those residing in foreign countries; hence, these numbers exceed the population estimates shown in the other tables of this report.
[b] The survey sample is the sample size minus persons known to be deceased or out of scope prior to the survey. The "out of scope" classification is assigned to an individual who indicated on a previous survey that he or she holds a Ph.D. from a foreign institution, is a foreign citizen, and resides in a foreign country.
[c] The number assumed contacted equals the survey sample minus those individuals for whom no valid address could be obtained.
[d] Responses include individuals found to be deceased or residing in a foreign country at the time the recent survey was conducted.
[e] Response rate "A" is the number of survey responses divided by the number in the survey sample. Response rate "B" is the number of survey responses divided by the number presumed to have been contacted.
[f] Includes only those individuals whose racial/ethnic group was known at the time the sample was selected.

APPENDIX E: WEIGHTING PROCEDURE

Estimates in this report are based on weighted responses. The 588 individuals (in the total sample of 16,416) who were known to be deceased or out of scope prior to the 1987 survey were inflated by their sample weights. The sample weight is the inverse of the sampling rate applied to each of the strata in the sample design. The products resulting from that inflation process were then subtracted from the population number in the affected strata to yield estimates of the target population in those strata. These target population values were then used in the response weighting procedure. A response weight, which is the product of both the sample weight and the inverse of the response rate for a given strata, was assigned to each of the 8,941 survey respondents. Estimates in this report were developed by summing response weights of the respondents selected for each analysis. Table E-1 illustrates the classification of the sample and the formulas used for calculating weights.

As weights that resulted from the computation process were not always integer weights, respondents in each stratum were assigned a weight that was equal to either the integral part of the stratum's response weight or the integral part plus one. Allocation of integer weights within a stratum was made at random so as to represent the stratum population.

For example, consider a stratum that contains 60 individuals, of whom 15 were selected for the sample. One of the 15 is known to be deceased prior to the survey. This individual receives a sample weight, 60/15, or 4.0, and thus represents 4 individuals in the population. The number of survey sample cases in the stratum is 14. Of these 14 individuals, 10 responded. The average weight for the responses to this stratum would be $(60/15) \cdot (14/10) = 5.6$. To obtain integer weights, 4 of the respondents (chosen at random) would each receive a weight of 5, thus representing 20 individuals in the population. The 6 remaining respondents would each receive a weight of 6, thus representing 36 population cases. Combined, the 10 respondents would represent 56 individuals in the stratum who, together with the 4 individuals estimated to be deceased, represent the entire 60 individuals in the stratum.

Table E-1: Classification and Weighting of the 1987 SDR Sample

Group		Number in Sample	Type of Estimation Weight*
TOTAL SAMPLE		16,416	
EXCLUDED FROM SURVEY			
Known Deceased Prior to Survey**	538		Sample
Out of Scope***	50		Sample
		- 588	
SURVEY SAMPLE		15,828	
No Valid Address		-1,395	
CONTACTED SAMPLE		14,433	
RESPONSES			
Completed Questionnaires		8,858	Response
Deceased (feedback from 1987 Survey)		+ 83	Response
TOTAL		8,941	

*The sample weight (Ws) and response weight (Wr) for each stratum was computed as follows:

$$Ws_h = N_h/n_h$$

where N_h and n_h are the respective population and sample sizes of stratum (h) and

$$Wr_h = [(N_h/n_h)\ (n_h/r_h)],$$

and where n_h is the number of survey sample cases and r_h is the number of survey responses in stratum h.

**Based on information obtained from the 1977-1985 surveys or through address searches.

***Based on responses indicating that the individual held a foreign doctoral degree, held foreign-citizenship, and was residing in a foreign country.

APPENDIX F: FINE FIELD OF EMPLOYMENT

TABLE F-1: PH.D.s in the Humanities in the United States, 1987

1987 Fine Field of Employment	Est. N
Total Population	84,968
Mathematics Total	230
Logic	155
Mathematics, Other	75
Computer & Information Sci Tot	1,840
Information Sci & Systems	690
Software Systems	642
Computer Sciences, Other	508
Physics/Astronomy Total	15
Earth, Envir, & Mar Sci Total	56
Earth Sciences	12
Environmental Sciences	5
Marine Sciences	39
Engineering Total	110
Medical Sciences Total	364
Speech Pathology & Audiology	42
Medicine & Surgery	157
Medical Sciences, Other	165
Biological Sciences Total	24
Psychology Total	487
Clinical Psychology	165
Counseling & Guidance	206
Psychology, Other	116
Social Sciences Total	2,685
Anthropology	201
Communications	628
Sociology	54
Economics	30
Econometrics	14
Demography	40
Geography	58
Area Studies	195
Political Science	189
Public Administration	354
Public Policy Studies	49
International Relations	418
Criminology & Crim. Justice	76
Urban & Regional Planning	114
Social Sciences, General	133
Social Sciences, Other	132
Arts/Humanities/Lang/Lit Total	62,946
American History	6,057
European History	3,500
History & Phil. of Sci	1,043
History, Other	3,178
American	4,003
English Language	3,763
English Literature	8,095
Classics	1,357
German	1,902
Russian	656
French	2,926
Spanish & Portuguese	3,390
Italian	338
Other Langugages	903
Comparative Literature	713
Linguistics	1,097
History & Criticism of Art	2,202
Archeology	316
American Studies	412
Music	5,793
Theater & Theater Criticism	1,684
Speech Dramatic Art/Debate	716
Religious Studies	1,698
Philosophy	4,455
Letters, Other	965
Humanities, General	1,003
Humanities, Other	781
Educational, Professional, & Other Fields, Total	15,383
Education	4,927
Applied Art	133
Theology	1,129
Business & Management	2,445
Home Economics	14
Journalism	698
Law, Jurisprudence	1,007
Social Work	77
Architec. & Environ. Design	27
Library & Archival Sciences	887
Prof. Fields, General	137
Prof. Fields, Other	937
Other Fields	2,965
No Report	828

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